Industrial FINISHING

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a part of American tradition since Pilgrim times, was proclaimed a national holiday in 1864 by President Lincoln. It has continued to be one of our great national observances.

Not quite one year later in 1865, the Lilly Varnish Company was founded. It has grown year by year since, and today is nationally known for its slogan—"With the Right Finish—You'll Finish Right".

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"THE KEY TO THE RIGHT FINISH"

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VARNISH COMPANY

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Interchemical *Finishes*

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ENAMELS for METAL, PLASTIC, WOOD

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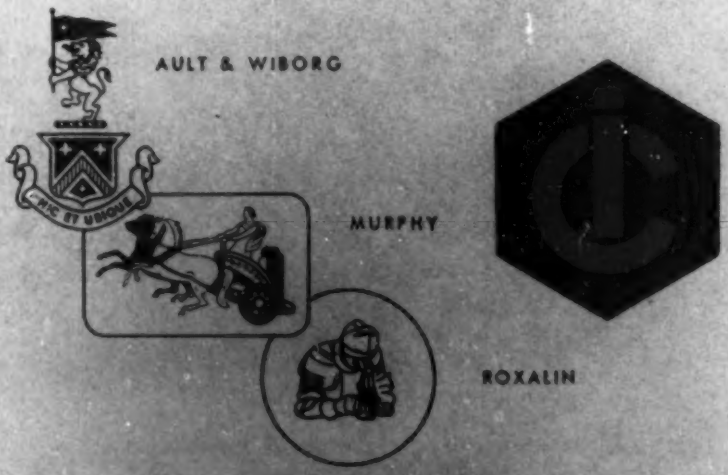

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EXPERIENCE
versus
PERFORMANCE

For a quarter of a century Balsa has confined its design and engineering talents and production facilities to systematization and conveyorization in the furniture industry. During this period over 3,000 installations have been designed, engineered, built and installed. Here then, is the background of experience which is your guarantee of satisfactory and profitable performance. Among the rewards for years of Balsa's performance plus are expressions of satisfaction such as those published below:

● "We are very well pleased with the installation of your multiple mechanical transportation device and find that it accomplishes every production increase and labor reduction you claimed it would do for us. We are able to double our production in board footage with only 50% of the usual former required labor. And we find the workers are very well pleased with the new system, as it makes it possible for them to produce great volumes with less effort and fatigue."—D. D. KLING, *Vice President,* Chautauqua Cabinet Co., Mayville, New York.

● "Mr. F. S. Acton, Vice President of the Balsa, Inc., of New York, took full charge of conveyorizing our plant, and since that time I have found the system he installed to be entirely satisfactory. The methods employed by Mr. Acton in carrying out his work, as well as the final result, has proven to me his dependability as an experienced mechanical engineer. The fact that Mr. Acton was always on the job and kept in touch with me afterwards to check on the operating results, has given me a great deal of confidence in his ability and integrity."—B. JOHN, *President,* B. P. John Furniture Corp., Portland, Oregon.

● "The rough mill multiple mechanical transportation conveyor system you designed, developed, manufactured and installed in our manufacturing plant in 1948 has accomplished the following plant economies: We are able to double our production in board footage. Our employees, working on this system, are well pleased with the new system, as it makes it possible for them to produce great volume with less effort and fatigue. It has accomplished every production increase and reduced labor you claimed it would do for us."—G. H. MASENHEIMER, *Vice President,* Sieling Furniture Co., Inc., Railroad, Penna.

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Exclusive Smokey Pine Stain Developed for Habitant

The informal charm of this comfortable living room group by Habitant is no accident. Original designing, skillful handcrafting of select Northern Michigan Knotty White Pine, and a special finish, all combine to produce this outstanding line. Both the Smokey Pine Stain and the special pine lacquer were developed exclusively for Habitant in our modern studios. Again our finish experts combined experience with imagination and modern facilities to create a finish that enhances the character of the furniture, yet is practical and profitable in production.

The Better the Finish,
the Better the Buy

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Industrial FINISHING

W. H. ROHR, Editor P. C. BARDIN, Associate Editor

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NOVEMBER, 1950
Vol. XXVII, No. 1

CCA

A monthly magazine for finishing room and paint shop foremen, production superintendents, chemists, purchasing agents and company executives of industrial plants where production cleaning and finishing are major operations in the manufacture of parts and products.

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27 TWENTY-SEVENTH YEAR OF PUBLICATION

Removes Car Static. The insulating properties of rubber tires in cold, dry weather permits build-up of static charges—a safety hazard to operators of trucks carrying inflammable liquids such as gasoline. To the drivers of pleasure cars these static charges are a nuisance because they cause interference with radio reception. Commerical vehicles have long been equipped with chain devices which, though effective for gounding the static charges, are noisy and subject to rapid wear.

An improved way to eliminate static discharge makes use of strips of a conductive neoprene (synthetic rubber) composition. The manufacturer reports that one of these trips, when attached to the chassis so that the free end drags on the pavement, becomes an effective grounding device. Neoprene was chosen for this application because of its excellent resistance to abrasion, oils, greases and weathering. And, too, the resilient neoprene strip makes no noise when in contact with the road surface.

* * *

TV Production Sets Record. The Radio-Television Manufacturers Association reports production of TV receivers in August reached 702,287, bringing the industry's output for eight months to an all time high of 4,146,602 sets. This 8-month record is better than one million units over the production for the entire year of 1949.

Radio production is still in the high brackets with 1,203,447 units produced in August, and a total of 8,750,965 for the 8-month period.

Evidently color video has more effect on stocks than on the buyers—and the buyers seem to be hurdling tighter credit controls without too much effort.

* * *

Trucks and Buses. The United States, with about 6% of the world's population, operates 51.6% of the world's trucks and buses, according to E. D. Bransome, president of Mack Trucks, Inc.

There are today more than 8,000,000 trucks in the United States, Mr. Bransome said. Of these, some 2,200,000 or 27% are owned by farmers. Another 4,500,000 or 56% are privately operated by dairies, department stores, bakeries, meat packers, telephone companies and other concerns which carry their own goods in their own vehicles.

More than 335,000 trucks, Mr. Bransome added, are operated by federal, state and local governments. Of the 1,000,000 for-hire trucks, 100,000 are operated by the railways.

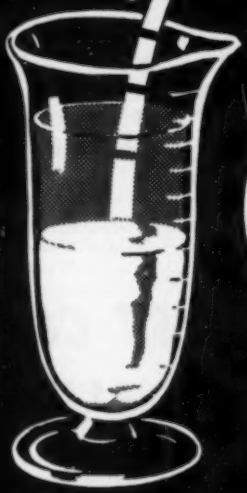
* * *

More Electric Power. In the first nine months of 1950, three times as much generating equipment was ordered from Westinghouse as in all of

(Continued on page 7)

. . . from the **start** . . . consider the **finish** . . .

as the solids go UP . . .



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1949. The electric utility industry again has been a leader in anticipating requirements which the nation will place on it for more electric power to produce military equipment as well as civilian goods in this period of global defense.

Electric power is a prime factor in our economy, in both its military and civilian aspects. Consumption of electric power has been growing steadily, and in September of this year it stood 16% ahead of the corresponding period a year ago.

Evidence of the electric utility industry's long-range planning to meet this growing demand is shown by the fact that, in some cases, steam turbine orders have been specified for delivery as far ahead as 1953.

* * *

Air Heated Electrically. Electric heating of extremely large volumes of air for comfort and processing is now possible with a new series of air blast heaters developed by a company in Pittsburgh, Penna.

Individual Chromalox Finstrip heaters are assembled in banks to form sections of various sizes which are welded in one large frame for mounting in air ducts. Heaters have Monel sheaths and fins to prevent corrosion caused by moisture in the air passing through the ducts. All metal parts of the frame are primed with a rust-prevention under-coating before being painted with a black, baked-on heat-resistant enamel.

* * *

More From Light Bulb. A new type filter-magnifier whitens the light from an ordinary incandescent bulb and almost doubles its intensity, providing excellent lighting for reading and handiwork. The plastic filter, which blocks red and yellow light from the bulb's rays, is attached to a magnifier which nearly doubles the intensity of the light. *(Continued on page 8)*

Test
Abrasion
Resistance
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ABRASER
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We are interested in stripping finishes from.....

Type of finish.....

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Company.....

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Fastened with spring-wire clips to a 60-watt bulb, for example, the filter magnifier produces a white light of approximately 120 watts. The attachment fits any shape incandescent bulb in sizes from 25 watts to 100 watts. It can be turned to any position on the bulb to direct the light as desired.

* * *

Floor Finish. A new self-polishing floor finish, certified anti-slip by Underwriter's Laboratories, Inc., is announced by the R. M. Hollingshead Corporation, Camden 2, N. J. The new product, which is applied and cared for like wax although it has no wax in it, is known as "Whiz Check-Slip."

"Check-Slip" was designed for use on all types of floors—asphalt or rubber tile, linoleum and wood. After the floor surface has been thoroughly cleaned, the new floor finish is applied like wax with a mop. It dries in 20 to 30 minutes and after 48 hours is completely water-resistant and may be wet-mopped. The high luster of the finish may be maintained for long periods by sweeping or buffing as necessary. Worn portions may be recoated from time to time without coating the whole floor.

* * *

Better Rubber. Research and development in the last 10 years has lengthened the service life of both crude and man-made rubbers so that today practically all industrial rubber products are made to higher specifications and wear longer than those manufactured a decade ago. So declares W. L. Smith, technical superintendent, Industrial Products division of The B. F. Goodrich Co.

Smith pointed to recent advances made in manufacturing and compounding man-made rubber "tailored" for particular jobs. The use of such tailored compounds in hose tubes and

(Continued on page 128)

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Here is another example from the thousands of plants using Fostoria Infra-red Systems. The Permutit Co., N. J., now uses Fostoria Infra-red for two baking jobs in manufacturing water conditioners and softeners. Applications of a special coating on the inside of these products are baked at an actual temperature of 450°F for 29 minutes. Then a white prime and finish coat of enamel is baked on the exterior. Mr. J. O. Sherod, plant superintendent, states: "The ease of operation and the flexibility recommend this installation highly. The quality of the product from the oven is much better than that from our old steam heated ovens. From an overall operating standpoint, handling costs of material to and from the oven are lower." Fostoria Infra-red can do an outstanding job in your plant, too. May we show you?

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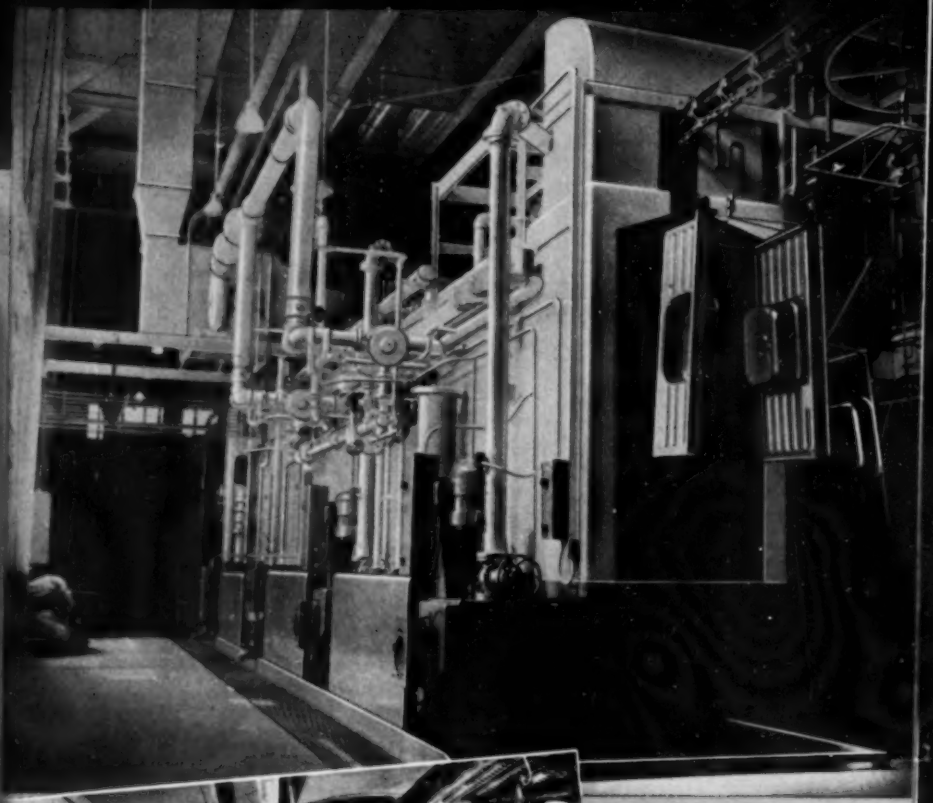

The Nine-Stage Spray Cleaning and Pickling Machine Above, Installed in the Kaiser-Fleetwing Plant, Bristol, Pa., was Designed by Mahon Engineers for Continuous Conveyor Processing of Parts and Products. A Hydro-Hermetic Seal at the Top of the Processing Tunnel Prevents Escape of Active Chemical Fumes and Protects the Monorail Conveyor.

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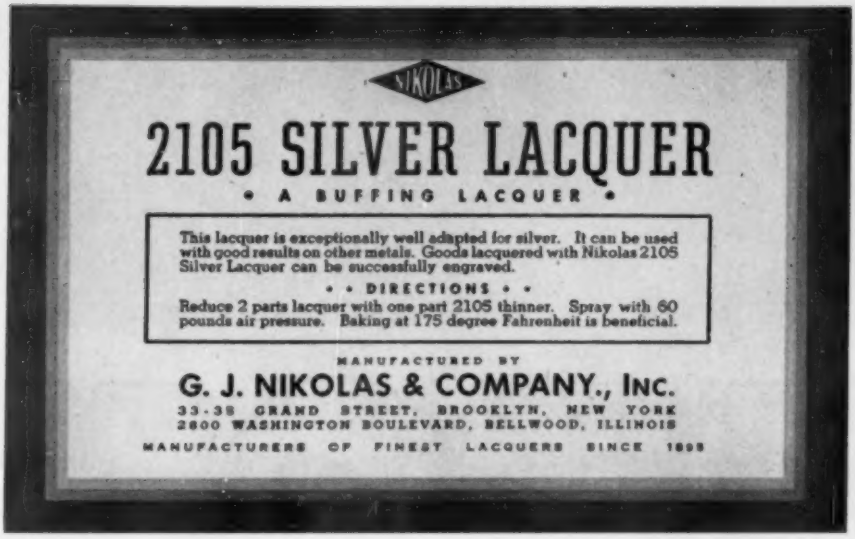
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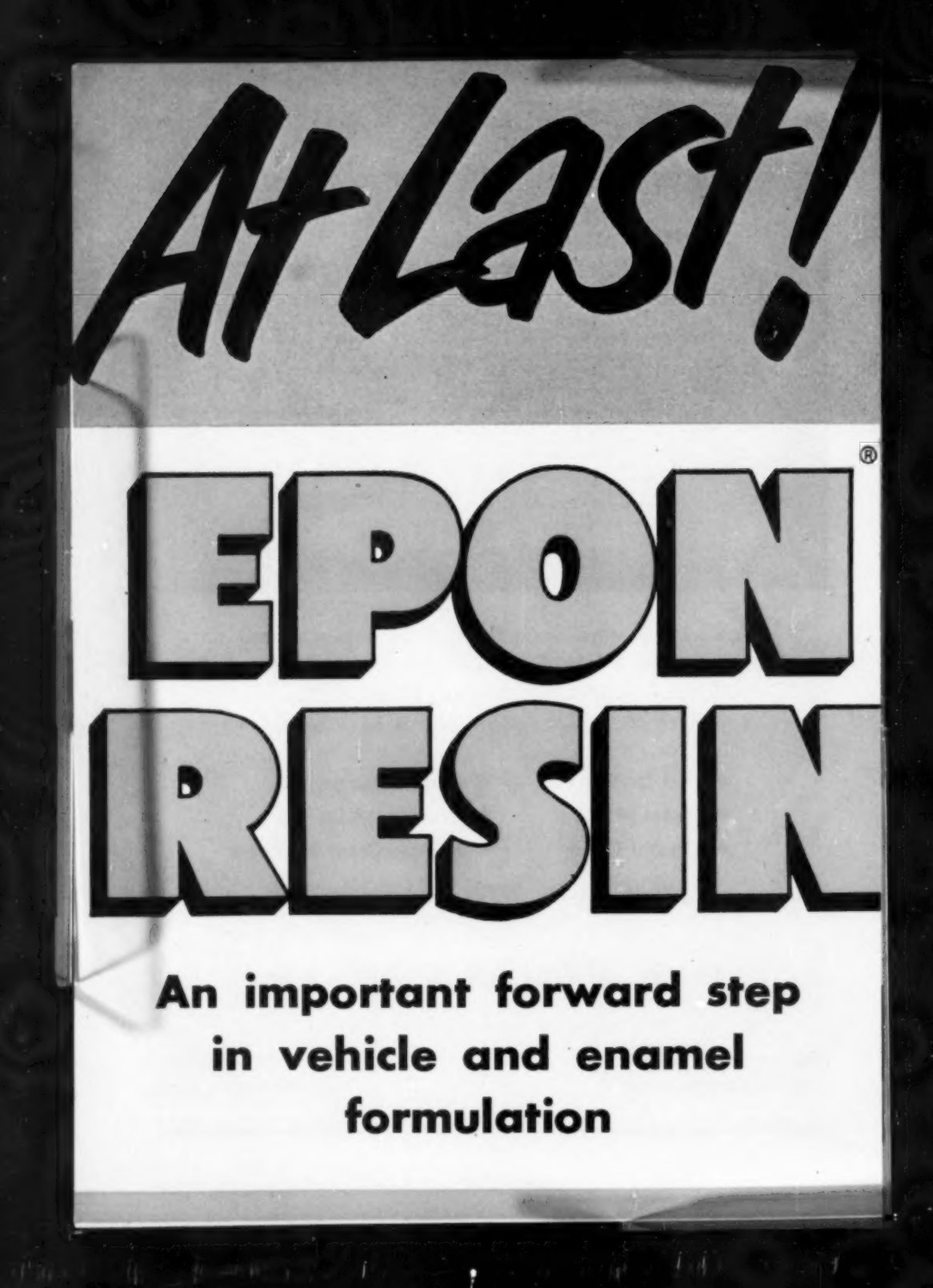
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Photo courtesy Gibson Refrigerator Co., Greenville, Michigan

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TO THE LAST 2/1000 OF AN INCH!

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APPLIANCE FINISHES

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WANTED: An extremely *flexible*, tough, quality finish to resist extreme changes in temperature and moisture content!

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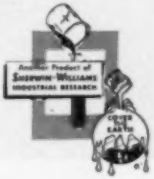

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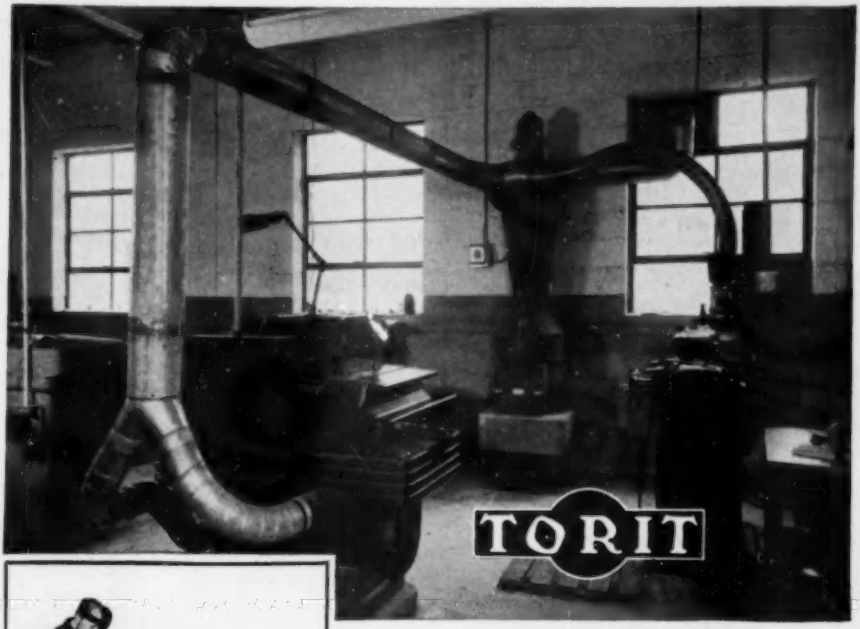
INDUSTRIAL FINISHES

Lafayette, Ind.



TORIT
Dust Collectors

Self-contained units for carrying away dust laden air from around grinding, cut-off and polishing machines. They are available in many styles and in sizes ranging up to 5 H.P.

Giving the old "One-Two" to the abrasive dust problem with a

TORIT DUST SEPARATOR

A one-nozzle set up as at the right, or the two-nozzle arrangement on the carbide tool grinder in the foreground—one machine or the other in operation—this Torit Dust Separator handles the dust problem efficiently, and requires little care and attention.

Compact, well arranged installations like this do not interfere with production. They mean better working conditions, higher output, and fewer rejects. That is why over 18,000 Torit units are working today in every type of American industry.

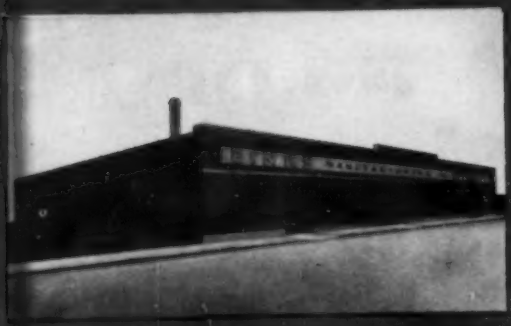
If you cut, grind or polish in your plant, you have a dust problem, and it will pay you to write Torit about it. We'll show you how it can be licked, and there'll be no obligation.

TORIT MANUFACTURING CO.

300 Walnut Street St. Paul 2, Minn.

P.S. Ask for latest Torit Catalog.

PLANT NO. 1



PLANT NO. 2

PLANT NO. 3

EVERYTHING FOR SPRAY PAINTING

SPRAY SYSTEMS

Plant No. 1—The Home Office and Plant at 3114-3128 Carroll Avenue, Chicago 12, Illinois. In addition to the executive offices and manufacturing facilities, this building houses Binks Training School and Research Laboratories.

Plant No. 2—A recent expansion of the Chicago manufacturing facilities. This plant fabricates and assembles the sheet-metal parts for Binks' expanding line of Water Cooling Towers and Spray Booths.

Plant No. 3—Just opened at 4915 Pacific Blvd., Los Angeles, California, to do light manufacturing, assembly and warehousing for the rapidly expanding industrial west.

TO GIVE YOU

better finishing equipment

AND SERVICE

More and more manufacturers are finding that modern finishing methods, utilizing up-to-the-minute equipment, can reduce their production costs and improve the quality of their products...can help them hold the price line and meet increasing competition.

As a result, the demand for Binks equipment (long regarded as tops by experts in all fields of manufacture) has grown steadily...and, to give the service deserved by Binks customers, the Company's production facilities, too, have grown.

First, extensions were built on the Home Plant, then came the addition of new plants in Chicago and Los Angeles. But, behind this solid growth has been a triple idea: to make a better product for you...to help you reduce your finishing costs...to give you better engineering and product service.

A Binks finishing expert will gladly call at your plant to discuss ways in which you can improve your finishing and reduce your production costs. There is no charge for this service. Just drop a line to the address below, or to your nearest Binks Office.

"The only excuse for expansion
is to improve customer service"

Burke B. Roche
President

Binks MANUFACTURING COMPANY

3116-40 Carroll Ave., Chicago 12, Illinois

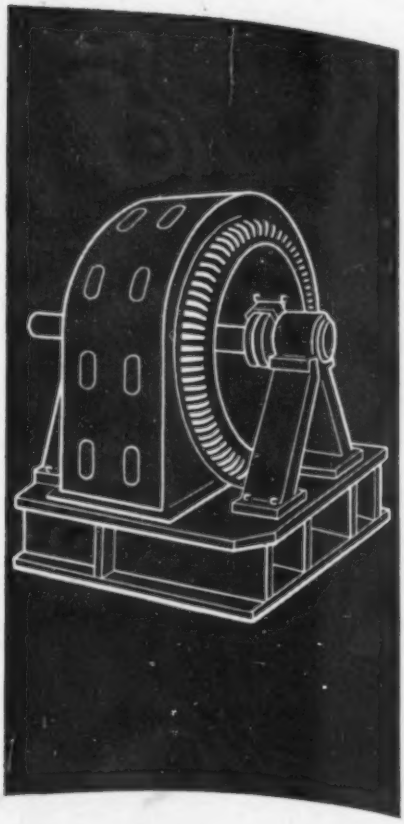
NEW YORK • DETROIT • LOS ANGELES • ATLANTA • BOSTON • CLEVELAND • DALLAS • MILWAUKEE • NASHVILLE
PHILADELPHIA • PITTSBURGH • ST. LOUIS • SAN FRANCISCO • SEATTLE • WINDSOR, ONTARIO, CANADA

LOWE BROTHERS
boosts manufacturer's

✻ A Lowe Brothers "Finishing Specialist" does not "sell" — he *serves*. In this case he demonstrated new techniques in finishing that resulted in new efficiency for a manufacturer of electrical equipment. These same recommendations are boosting finishing efficiency for manufacturers of kitchen utensils, toys, radio cabinets and auto dashboards — just to mention a few.

"FINISHING SPECIALIST"

efficiency.. lowers finishing cost!



Here is one of many cases where a "Finishing Specialist's" *up-to-the-minute* knowledge of latest finishing methods resulted in a money-saving solution to a manufacturer's problems. An eastern manufacturer of electrical equipment was experiencing slow production because of the drying time required for the filler he was using. A Lowe Brothers "Finishing Specialist" was quick to suggest a modern application technique* that reduced finishing costs without sacrificing the quality of finish. Two separate brushing operations were eliminated! Drying time was greatly reduced! Efficiency was stepped-up throughout the entire finishing operation!

Lowe Brothers files are filled with similar cases, where the overall finishing knowledge and experience of a "Finishing Specialist" have led to sizable savings and better efficiency for manufacturers large and small. Benefit by this free Lowe Brothers service. Have a "Finishing Specialist" analyze your finishing methods now. Write today!

INDUSTRIAL DIVISION • THE LOWE BROTHERS COMPANY
DAYTON 2, OHIO

This advertisement is based on facts from the Lowe Brothers Industrial Case History Files.

LEADERSHIP THROUGH CONSISTENT SERVICE

Lowe Brothers
FINISHES FOR INDUSTRY

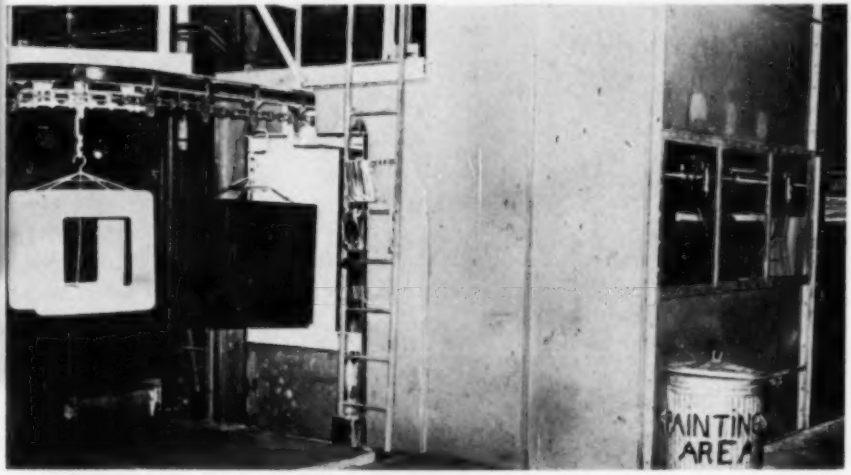
NO DUST IN SPRAY ROOM
Or On The Way To Baking Oven

By P. C. BARDIN

Everyone who has anything to do with finishing appreciates the need for clean air where finish coatings are applied and where they dry, to prevent dust, dirt and lint (some of which is almost invisible to the eye) from falling on and becoming imbedded in the wet surfaces of freshly coated products.

DUST IN the atmosphere is with us always. Regarless of the size or location of a factory the problem of preventing dust from settling on freshly painted products is always present. Just how big the problem is depends upon the location of the plant and the finishing room, type of product and manufacturing operations, and the finish requirements. Dust cannot be eliminated, but it can be controled. It can be prevented from contacting freshly coated products.

Pressurizing a spray room with clean air is accomplished by *filtering the air that enters the room and forcing more air into the area*



Cabinets entering pressurized spray room. An air lock at this opening, and at the exit, prevents entrance of any air from the outside; likewise, the air lock prevents overspray and fumes escaping at these openings. Photo, courtesy of J. O. Ross Engineering Corp.

than is removed by exhaust fans. In some cases it is necessary to pressurize an entire finishing room. When this is done it is also desirable to seal and waterproof the concrete floors so they can be easily cleaned, and to prevent foot traffic from circulating any dust. Such extreme dust preventive measures might be necessary, for instance, in a plant where plastic products made of highly electrostatic polystyrene are finished. However, for the majority of metal and wood products that require a high quality finish, these extreme dust preventive measures are not needed; a pressurized spray room is all that is necessary.

A G.E. Pressurized Spray Room Setup

Many pressurized spray rooms are in operation in plants throughout the country, but to pin this discussion down to a definite concrete example I have chosen the installation in the General Electric Co. Appliance and Merchandise Department's plant at Trenton, N.J. Here, protection from dust has been carried a little farther than usual. *Freshly coated products travel from the pressurized spray room to the bake oven through metal enclosed vestibules or tunnels.* This really makes sense. Why go to the expense of fitting up and maintaining a pressurized spray room, and then allow freshly coated articles to travel through unpressurized areas, where dust and flying particles may be present, on their way to the bake oven?

It would seem quite obvious that if a pressurized spray room is necessary to obtain a high quality finish, then the entire area between the spray booth and the drying oven, where the finish on products is wet, should also be pressurized, or an air-tight tunnel should be provided through which parts will travel from spray booth to oven.

Air entering spray room passes through these replaceable filters which catch and retain any dirt, dust or lint, releasing only clean air to spray room. This contributes to clean finishing. Photograph courtesy of General Electric Co.

Perhaps it would be well to clarify the term "pressurized spray room", since it is not exactly the same as when we refer to a tank being under so many pounds of air pressure. To maintain pressure in the spray room, a greater volume of clean filtered air is always entering the spray room than the volume of air being exhausted. As a consequence, the direction of air flow through any cracks or openings

is outward instead of toward the inside, therefore outside drafts of air containing dust particles can not be drawn into the room through these openings.

Air Locks; Enclosure Spray Booth to Oven

While it is desirable to force the filtered air out of the spray room to keep dust out, due consideration must be given to providing suitable air locks or other means of preventing overspray and fumes from being carried outside the room.

Another question that requires consideration, in the use of enclosed tunnels or vestibules connecting a spray room with an oven, is to pressurize the entrance of the tunnel to prevent dust from entering it; also to remove solvent fumes as the wet coat flashes (air dries) and finally, to prevent cool or room-temperature air in the tunnel from entering or being forced into the oven to reduce oven temperature.

A Problem for Experienced Engineers

Probably there are several different methods that could be used to solve these problems. However, the solution lies definitely with competent engineers. I shall explain and illustrate how these problems were solved in the General Electric plant at Trenton. Here we find two identical spray rooms, one for the prime coat and the other for the top coat enamel. Each room contains a 40-ft. water-wash spray booth. An air flow of 150 lineal feet per minute moves through the booth where the operators work (from front opening of booth to the water curtain).

Air Locks in Spray Room Play Important Part

The accompanying sketch shows a section of one spray room. Each 40-ft. water-wash exhaust chamber is served by four 3-hp. 42-in. diameter exhaust fans capable of moving a total of 45,000-cu. ft. of air per minute. The air washing chambers in these booths have four water pumps delivering a total of 3332-gallons of water per minute to thoroughly clean the air and remove all overspray from the exhaust air.

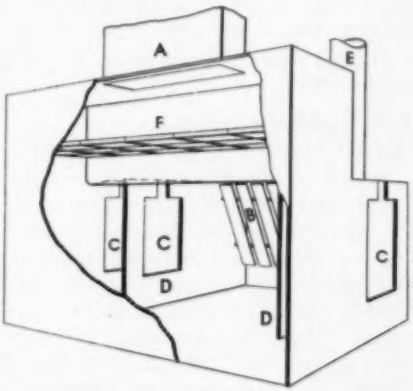
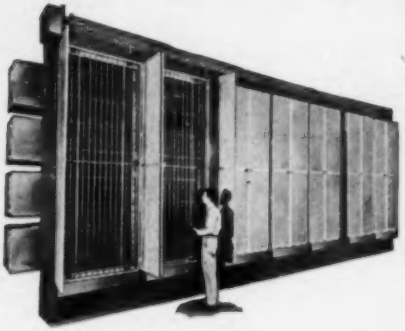
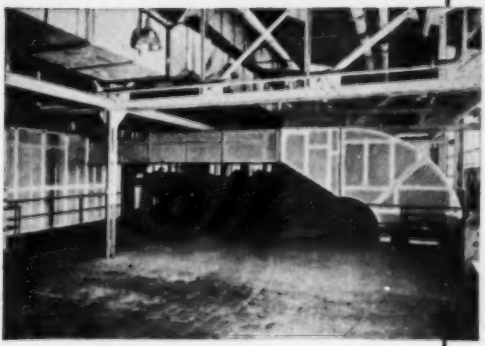


Diagram of pressurized spray room, with part of front cut away to reveal interior. Illustration courtesy of The DeVilbiss Company.
A — Duct from air make-up cabinet.
B — Baffle plates. C — Conveyor openings.
D — Partitions to form air locks.
E — Exhaust stack. F — Air filters.

Overspray is prevented from being forced outside the spray room by coordinating the air input with the air exhausted, and providing a partition which forms the actual spraying chamber. The partition on each side of the booth terminates just short of the area of the booth below the inlet chamber. The

SUPER-CLEAN AIR contributes to *Pliofilm's** sales appeal





AAF Electro-Matic Precipitators guard product's Crystal-Clean Transparency during processing

FOOD products packaged in Pliofilm, made by Goodyear, are protected against air, moisture and liquids. What's more, their natural goodness is on display continually before the buyer because of Pliofilm's crystal-clear transparency.

Dust and dirt could easily mar such transparency if permitted to reach this material in the early stages of production. That's why all air supplied for the casting operation is delivered through ducts, as shown at left, after being thoroughly cleaned by AAF filters. Electro-Matic† Electronic Precipitators, similar to the units shown above, were selected because of the high degree of cleaning efficiency demanded.

Clean air has been the means of improving product quality, cutting rejects and reducing plant maintenance for many companies. But needs vary by product and industry. That's why AAF offers a complete line of filters ranging from electronic types to the simple throwaway unit. Regardless of your requirements, AAF has both the products and the engineering experience that insure the selection of the right filter for your job.

If you are interested in how clean air can cut costs in your operation, call your local AAF representative. He's the only man with a complete line of filters who can give you an unbiased answer.

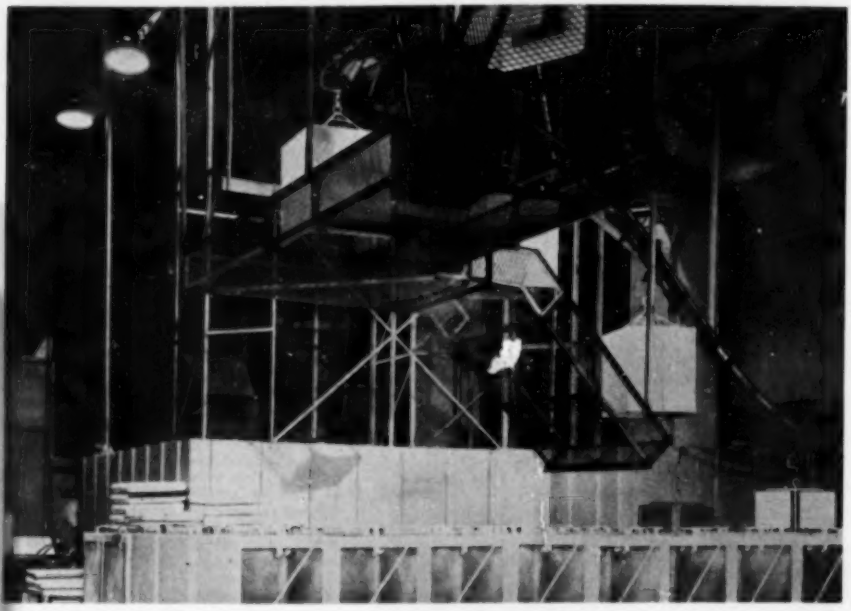
AMERICAN AIR FILTER COMPANY, INC.
210 Central Avenue, Louisville 8, Ky.
In Canada: Darling Bros., Ltd., Montreal P.Q.

**Trade-mark of The Goodyear Tire & Rubber Co., Inc.*

†Automatic electronic precipitator.

AAF

AIR FILTERS
AND ELECTRONIC PRECIPITATORS



Air-conditioned spray booths are at extreme left and oven is at extreme right. Connecting these two units is an enclosed sheet metal "tunnel" through which spray painted products are conveyed to oven. A space of several inches separates the exit of spray booth from entrance to "tunnel", to prevent any air from spray booth being drawn through "tunnel" and into oven. Conveyors above are moving products from oven to assembly department. Photograph loaned through courtesy of General Electric Co.

width of space between the side wall of the room and the adjacent partition is equal to the width of the conveyor openings in the wall and the partition. This air lock prevents fumes and overspray from being forced outside the spray room and at the same time it prevents dust from entering the spray room.

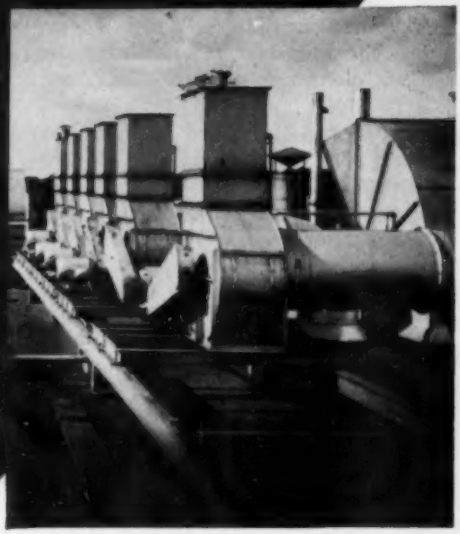
Incoming Air is Filtered and Heated

Each spray room has three make-up air cabinets which deliver a total of 48,000-cu. ft. of air per minute; this represents about 3000-cu. ft. of air per minute in excess of the total air exhausted. This plus factor is almost impossible to measure in terms of pressure because of countless variables.

Air make-up cabinets provide a means capable of heating the air from minus 10° F. to 80° F. maximum, using steam at 15-lbs. pressure. Air is filtered through 2-in. spun glass replaceable filter units. Blowers force the air from the cabinets through ducts into the spray room where it is diffused through a series of elevated horizontal filters which extend across the front width of the room. These replaceable filters not only re-filter

For Better Working Conditions in Paint Spray Departments

Be Sure - specify "Buffalo" FANS ON YOUR EXHAUST SYSTEMS



"BUFFALO" INDUSTRIAL EXHAUSTERS
("MW" for Material Handling, "AW" for more efficient Air Handling.)

- DEPENDABLE—"Buffalo" Fans have earned this reputation in every industry in exhaust systems.
- EFFICIENT—a complete range of centrifugal and axial flow fans, a satisfactory fan for your particular installation.
- LOWER COST IN THE LONG RUN! "Buffalo" Fans are long lasting and simple to service — saving on both power and maintenance.
- WRITE FOR FACTS!

"Buffalo" First For Fans

BUFFALO "Buffalo" FORGE COMPANY

532 BROADWAY BUFFALO, NEW YORK

Canadian Blower & Forge Co., Ltd., Kitchener, Ont.

Branch Offices in All Principal Cities

VENTILATING AIR WASHING AIR TEMPERING INDUCED DRAFT EXHAUSTING
FORCED DRAFT COOLING HEATING PRESSURE BLOWING

the air but, more important, they provide proper distribution of air in the room.

The subject of air filtration is far too extensive to be dealt with here. Many different types of air filters are available. They range from the simple replaceable filters to self-cleaning electrostatic units where dust particles are ionized and collected on negatively charged plates from which they are removed automatically by washing with water or oil, or by scraping. Which type of filter to use can best be determined, in each individual case, by competent engineers. It depends upon such factors as the product to be finished, the volume of production, dust conditions, and the amount of money available for the installation.

Air Tight "Tunnel" Between Spray Room and Oven

Now to the sheet metal vestibules or tunnels through which parts travel from the spray room to the drying oven. If the tunnel were actually connected to both the spray room and the oven, it would be impossible to prevent tunnel air from entering the oven—and the pull of the oven exhaust fan would have to be added to that of the spray room in figuring the plus factor of air required in the spray room.

To eliminate this difficulty, two methods are possible. One is to have a space between the spray room exit and the tunnel entrance; also between the tunnel exit and the oven entrance. In this case a small spark-proof fan can be used to exhaust solvents which flash off the sprayed work as it passes through the tunnel.

The other method is to allow a space between the spray room and the tunnel, and connect the exit end of the tunnel to the oven. In this case the oven exhaust fan removes volatile solvents from the tunnel.

Which method to use can best be decided after examining the details that have a bearing on each individual case. A decision will depend, to a great extent, on dust conditions, size of installation and the permissable financial expenditure.

In the particular plant under discussion, about 12-in. of space separates the spray room exit from the entrance to the tunnel. The exit end of the tunnel is practically against the oven entrance. By this means, solvents that flash off sprayed work in the tunnel are exhausted by the oven fan which was selected to handle the additional volume of air. By controlling the air volume or pull through the tunnel, keeping it low but safe (to prevent solvent concentration) and by controlling the spill of filtered air from the spray room exit opening across the 12-in. space, dust particles are prevented from entering the tunnel.

No air locks are required on a modified A-type of oven, as the design of this kind of oven provides an automatic air seal at both entrance and exit.

Fire Didn't Knock Us Out!

Wood-Craft Manufacturers, Inc., 601 S. Longwood St., Baltimore 23, Md., announces that it has continued in business, even though it suffered severe loss by fire on September 28. Production was underway at a temporary location within two weeks after the fire. In the meantime a new modern one-story brick building, to house the factory and offices, is under construction at the above address.

COATED PRODUCTS COMMENTS

More Production . . .

Performance records of Industrial Cloth Belts by CARBORUNDUM show an average production increase over other belts of similar specifications. In grinding and polishing stainless steel parts, for example, as much as 30% greater production has been reached!

CARBORUNDUM's Industrial Cloth Belts feature tough, long-lived abrasive—firmly bonded to heavy cloth backing by special heat-resistant glue. The sharp, fast cutting action stands up under severe operations. It is specially formulated for grinding and polishing high and low tensile strength metals such as hot and cold rolled steel, cast iron, heat-treated forgings, stainless steel, aluminum die castings, etc.

Investigate *now* the production gains and lower unit cost of Industrial Cloth Belts by CARBORUNDUM. The Carborundum Company, Coated Products Division, Niagara Falls, New York.

COATED ABRASIVES BY

CARBORUNDUM

TRADE MARK

Making ALL abrasive products . . .
to give you the proper ONE

"Carborundum" is a registered trademark which indicates manufacture by The Carborundum Company

Does office
Quick Facts
about
Polychrome Metallic Finishes
• Improved by new vehicle developments
• Porcelain-like surfaces
• Obscures surface defects
• Easily applied—spray, then bake or air-dry to a high-quality finish.

equipment have to be drab?

You can dress it up at no extra cost with a

POLYCHROME METALLIC FINISH

File cabinets—desks—duplicating machines—they can all add a touch of handsome color to any office—yet cost no more to produce than ordinary finishes!

Polychrome finishes, pigmented with Alcoa Albron Pigments, can make the difference. Because Polychrome finishes give your product a rich, porcelain-like metallic luster that tempts the eye and the purse.

You won't run into any serious application problems. Just spray on, then bake or air-dry the Polychrome finish. Metallic finishes pigmented with Alcoa Albron Pigments are available from your commercial finishes supplier. Or write ALUMINUM COMPANY OF AMERICA, 1732L Gulf Bldg., Pittsburgh 19, Penna.

Why settle for just "any finish" when a Polychrome Metallic Finish costs no more?

ALCOA

ALBRON PIGMENTS

for Production Finishes

ALCOA ALUMINUM

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Old Equipment Better than New! with

BURDETT
"Radiant Heat"
GAS SYSTEM

A readjustment in your present heating system with an installation of a Burdett Gas Combustion System can achieve **30% to 70% savings** and a record high in processing speed, quality and economy. Years of testing in use conclusively prove these all-around advantages—

FUEL WASTE ABOLISHED—because of complete, clean combustion.

HEAT TRANSFER INSTANTANEOUS—with no heat loss, no processing loss due to time lag.

FASTER STARTING—burners reach operating temperature in only 45 seconds.

FAULTLESS PERFORMANCE — guarantees consistent, uniform results.

FLEXIBLE TO ANY REQUIREMENT—Burdett Gas Burners are available in a wide range of shapes and sizes. They can operate in any position—at high or low pressures—arranged in any pattern for maximum heating efficiency—with manual, semi-automatic or completely automatic controls.

SUITABLE FOR—Paint, Enamel, and Lacquer Drying, Flash Coat Drying, Burn-Off, Degreasing, Water Dry-Off, Core Baking, Soft Metal Melting, Food Processing, etc.

SUBSTANTIATE FOR YOURSELF the positive rewards of a Burdett Radiant Heat Gas System as compared to your present heating methods. Send us blueprints and requirements for complete Burdett - engineered recommendations.

Two ovens, independently operated from one Burdett System, permit 5-minute bake at 350°F. for flow-coated machinery and parts at National Farm Co-op, Belleville, Ohio.

BURDETT
MANUFACTURING COMPANY
RADIANT HEAT GAS SYSTEMS

Protective Coating for Museum Silver

A COLLECTION OF Old World decorative art, touring this country during the past year, includes many valuable pieces of beautifully etched silver which must be protected from becoming tarnished and soiled.

The cleaning and polishing of soiled, tarnished metal is a never-ending job in any museum, even with permanent displays where there is little handling of the objects. In a traveling exhibit the task is still greater. There is more to the matter than just the time and work involved. Many ancient decorative pieces contain materials that may be damaged by the abrasive action of polishes. The Wilten Chalice, for example, is silver inlaid with niello. It is dated about 1160 A.D. Niello is a black, sulfur-containing alloy which is rubbed into carvings and baked on something like an enamel. The exposed part of the silver tarnishes and must be cleaned, but repeated cleaning is harmful to the niello.

Before bringing the exhibit to America a way was found to eliminate the need for much of this cleaning and polishing. The metal objects were coated with a thin, transparent coating of Acryloid B-72. This acrylic resin, in toluol solution, forms films that are strong, tough and durable, completely transparent and free from any tendency to yellow on aging. The solution may be applied by dip, spray or brush.

The coated art treasures, which previously had to be cleaned and polished before every exposition, have now been through five large showings without need for any polishing. They are still in perfect condition.

This coating material is well suited for protecting many types of decorative metal pieces from soil, tarnish or corrosion.—*Rohm & Haas Reporter.*

See How Full-Color Decals Look on Various Products

To permit practical demonstrations of large scale Decal installations, The Meyercord Co., Chicago decalcomania manufacturer, has adopted 3-dimensional Stereo-Viewer kits, designed as a visual aid for their sales department.

Using the Meyercord Decal Stereo-Viewer.

Each salesman has a light, compact kit containing viewing apparatus and sets of photographic slides, showing, in full color, actual use of Decals on trucks, tank cars, large machinery, and their use as window signs and valances.

The kits are intended to give the customer the additional benefit of actually seeing many types of locations and surfaces where Decals may be used for nameplates, signs, truck lettering and product decoration.

Reports from the field, backed by increased sales, directly traceable to use of the kits, indicate extremely favorable reception by customer and salesmen alike.

Self-Spraying Touch-up White

Sprayon Products, Inc., 1900 Euclid Ave., Cleveland 15, Ohio, announces that it has developed a successful formulation with nitro-cellulose-based lacquer, having concentrated on refrigerator white.

A self-spraying lacquer in the handy, low-pressure aerosol container is actually a "tool" which has developed a great amount of interest not only from appliance and office equipment manufacturers, but also distributors and dealers who have a touch-up problem in the field.

Fig. 1 (Opposite page) The two transformer tanks were both exposed to 1000 hours of salt spray. The tank at right had the 3-coat X finish, while the one on the left had Coastal Finish.

Fig. 4 (Left) This equipment dips test panels into a bath of either acid or alkali solution and then it lifts them out of the liquid to dry in air on a 4-hour cycle—two in the solution and two in the air.

DURABLE PAINT SYSTEM

THE LIFE of the finish on Westinghouse distribution transformers has been more than doubled by a 3-coat paint system which has been given the name, "Coastal Finish". Each coat functions cooperatively with the others to withstand the oxygen, acids, salts, and alkalis found in seacoast and industrial atmospheres. This 3-coat system is applied in the same manner as any standard finish and in production it is baked on for speed. A modification of this finish will air dry, therefore it can be used to patch a transformer in the field should the surfaces be damaged.

Distribution transformers operate under especially severe conditions that affect the finish applied to the outside of the tank and associated hardware. The surfaces of fully loaded transformers, exposed

By J. G. FORD & A. J. KUTI, Manufacturing Engineers

FOR TRANSFORMER TANKS

to direct sunlight, often reach temperatures of 200° F. and sometimes higher. During the winter months these surfaces may be exposed to temperatures as low as -50° F. With an operating range of 250° F. the paint must be sufficiently flexible so as not to flake off due to differential expansion and contraction between paint and metal.

Elevated temperatures and oxygen of the atmosphere also cause the paint films to age and become brittle. This accelerates the tendency to flake or craze during the winter months. It is important, therefore, not only to select a finishing material from the standpoint of initial flexibility but for heat resistance too.

Moisture in liquid or vapor form is perhaps the greatest enemy to the finish on distribution transformers in ratings commonly hung

Transformer Division, Westinghouse Electric Corporation

on poles. It readily attacks any exposed steel surfaces, forming rust; it gradually penetrates paint films, corroding the metal underneath. Rust formation and hydrogen generated at the metal surface cause the paint to blister and lift. Once the film is broken, corrosion is accelerated and pits develop. If the formation and progress of pitting is not arrested the tank may be penetrated, thereby allowing the insulating oil to leak out and cause the transformer to fail. If it were not for moisture, the finishing of pole-type transformers would present no serious problem except in rare cases. Oxygen, salts, acids, and alkalis present in the seacoast and industrial atmospheres usually are destructive; they deteriorate the film and pave the way for moisture to do its damage. Also, the effects of certain impurities accelerate corrosion by moisture once it gets to the metal.

New Three-Coat Paint System Developed

The individual coats of the new 3-coat system act cooperatively to resist moisture penetration and also the elements that promote it. Proper preparation of the metal surface is necessary before the finish is applied. Good adhesion is generally obtained by removing all rust, scale, grease or other extraneous material. Ideal surfaces are obtained by treatment with phosphate solutions to form iron phosphate at the surface. The phosphate film retards corrosion by the passivating effect, and offers a tightly adhering porous surface for the base coat of paint to penetrate and grip mechanically.

The prime or first coat applied to the prepared surface is composed of a vehicle that gives excellent adhesion, with desired flexibility and chemical resistance to salts, acids, and alkalis. The pigments used are primarily zinc chromate and iron oxide. Zinc chromate is perhaps one of the best corrosion inhibiting pigments due to the availability of the chromate iron in the presence of moisture. However, if used as a single pigment, it usually produces a film that is somewhat brittle. When combined with iron oxide, the brittleness of the film is reduced and the storage life of the paint is increased.

Surprising as it may seem when this combination is tested as a

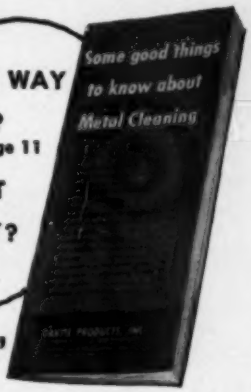
The prime coat is flowed on manually.

Oakite's New FREE Booklet

"Some good things to know about Metal Cleaning"

WHAT'S THE FASTEST WAY TO CLEAN METAL?
See page 11

WHAT'S THE MOST ECONOMICAL WAY?
See page 9



answers many questions that mean better production for you, more money in your pocket. You'll want to read more about:

Can one cleaning material do all metal-cleaning jobs? See page 5.

What kind of cleaner attracts both oil and water? How does this help to remove buffing compound residues and pigmented drawing compounds? See page 8.

What are the advantages of reverse current for electrocleaning steel? See page 15.

Can you electroclean brass without tarnishing? See page 18.

Can you clean steel and condition it for painting for less than 20 cents per 1,000 square feet? See page 26.

Would you like a cleaner that removes rust and oil in one operation, often eliminating all need for pickling. See page 28.

Does your burnishing barrel produce a luster you are proud of? See page 32.

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The second, or mica-base coat is sprayed.

priming coat alone, in comparison with other primers containing, for example, lead chromate or red lead, it may at times appear to be inferior. The superiority stands out when the tests are repeated after the finish coats have been applied.

What's in Second Coat Of "Coastal Finish"

The second or intermediate coat is really the key to the successful performance of Coastal Finish. The vehicle is composed of modified phenolic and alkyd resins. These are chosen for resistance to heat, oxygen, salts, acids, and alkalis in concentrations generally encountered in the atmosphere. The resin is of the thermoset type. By proper selection of solvent and adjustment of setting time of the resin, it is possible to remove the solvent completley during the initial part of the drying cycle before the resin has set to the hard state. This permits the resin to flow after solvent elimination and prevents pinholes through which oxygen and moisture could enter.

The pigment is compsed of selected mica flakes which overlap each other in the film and produce a "shingle roof" effect to further ward off moisture and oxygen. The mica also increases heat stability of the intermediate coat at elevated temperatures.

The use of mica in paint is not new but the way in which it is used in this paint has not been utilized in the past. The relatively large mica flakes, plus their tendency to settle, presented problems of application but these troubles have been overcome.

Final Top Coat— And its Functions

The third and final coat is composed of resins and pigments to withstand the elements and to provide good appearance when new and after weathering has taken place. It can be tinted to give any desired color. When chalking takes place, a slightly darker shade develops which does not detract from the appearance of the transformer.

The final coat has several functions; for example, it:

1) Adds to appearance.

2) Enhances the resistance of the other two coats to oxygen, moisture, etc.

3) Screens out the ultraviolet light of the sun's rays.

A series of panels was made to demonstrate the resistance of the combination of primer and mica-

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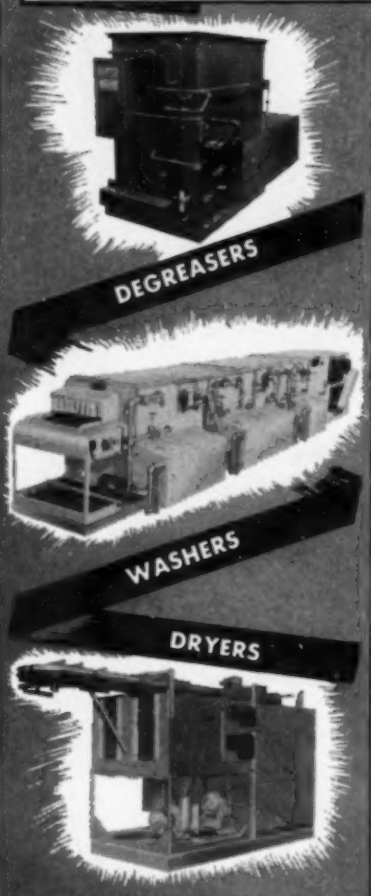

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OPTIMUS METAL PARTS WASHERS, single or multiple-stage—screw drum or conveyor, mesh belt or monorail types.

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Panels with mica-base finish and panels with the X finish were exposed in this Weather-O-Meter. After 12 weeks of alternating cycles of one hour in fog and three hours under ultraviolet light, both samples showed some chalking but not any severe deterioration.

filled second coat to salt spray and weathering. These test panels were phosphatized, given a primer coat and then two coats of the intermediate or second coat of the system. They were tested simultaneously with panels painted with a standard 3-coat finish which we shall call the X finish.

Salt Spray and Outside Exposure Tests

After 2000 hours of exposure to the salt spray, the mica finish showed no change whereas the X finish was approximately 50% deteriorated. At 3000 hours the X finish was completely gone. It required a total of 10,000 hours continuous exposure to salt spray before small blisters began to appear on the mica finish. When the blisters were broken, there was evidence of trapped gas, possibly hydrogen, and a thin film of rust.

Other mica-finished panels were exposed for 18 months on Florida and California seacoasts. Weathering took place at the surface, exposing some of the mica flakes. However, there was no sign of corrosion. A mico-photograph of a small section of the surface revealed that the exposed mica flakes appear to be largely parallel to the film surface, and defintely indicate a shingled effect which may partly account for resistance to salt spray and added heat stability of the vehicle.

It appears also that the mica addition improves the coverage on sharp or burred edges, thus reducing the tendency to corrode at these points.

Metal Surface Preparation; Methods of Paint Application

The metal surface is first alkali cleaned and rinsed, followed by phosphatizing and a dip in dilute chromic acid. This results in a very clean surface, light gray in color and of sufficient porosity for

good paint penetration with maximum adhesion. To prevent any contamination of the prepared surface the transformer tanks are given the first or priming coat within a matter of hours by flow coating. Viscosity and gravity are controlled. The flow-coating process is used for priming to fill any crevices that are left between the

Transformer tanks emerging from infra-red oven, in which prime coat was baked, are now ready for the second coat.

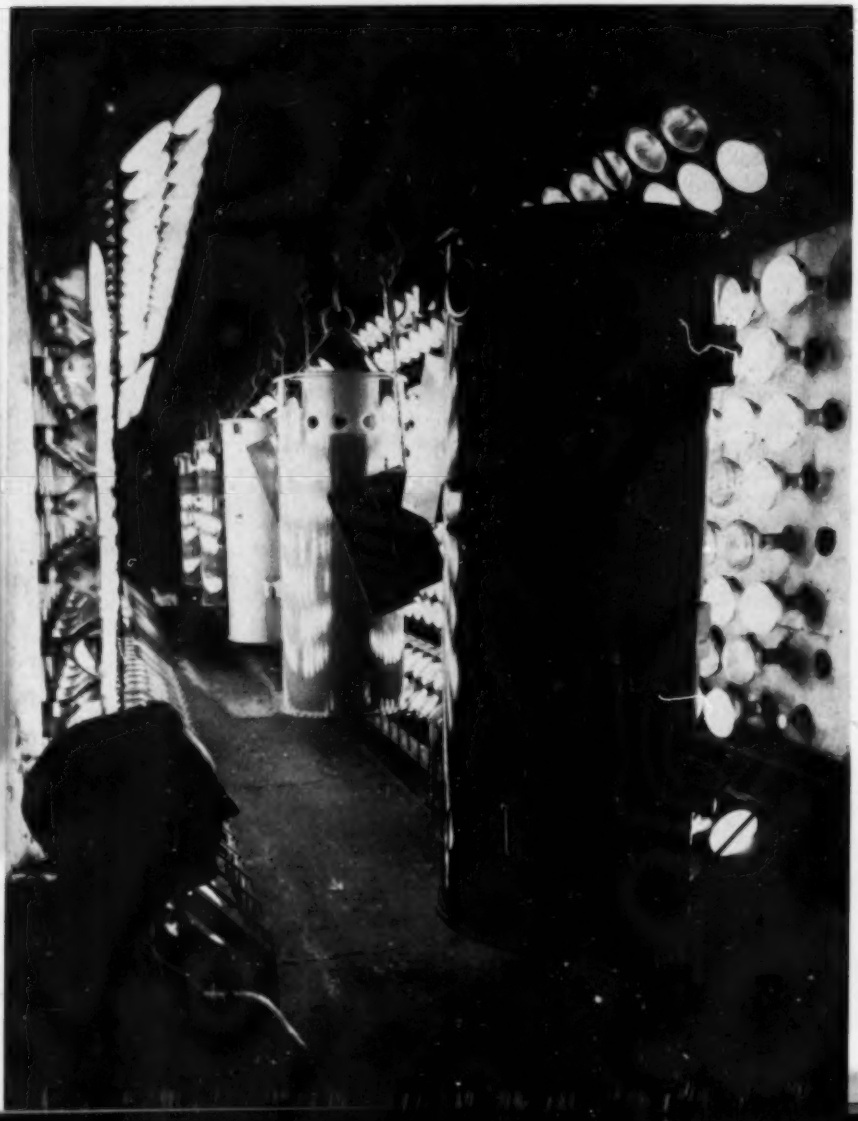

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Fig. 2—After 2000 hours of exposure to salt spray a large area of the X finish on the panel to the left was gone and corrosion was apparent; the mica-base finish on the panel to the right showed no corrosion.

tank wall and projecting welded parts. It also assures complete and uniform coverage of all parts. The tank then is conveyed by monorial through an infra-red dryer. A surface temperature of approximately 340° F. is reached by the time the tank leaves the oven.

After cooling, the second coat is sprayed on. A dark green dye is incorporated into the otherwise clear mica-base paint or enamel to assist the operator in determining coverage and to allow for easy and quick inspection. The dye fades out, leaving a dark-brown color on subsequent infrared baking which is done in the same type oven and at the same temperatures as for the first coat. The film dries to make a hard, tough, abrasion-resistant coating.

Not until the transformer is completely assembled and tested is the third and final dark-gray coat applied. The transformer is then conveyed through a steam heated convection oven operating at 160° F., where the final coat is dried tack-free. Hardening of the film takes place in storage and during shipment.

Salt Spray Resistance Tests on Finishes

The salt spray resistance test is made in standard salt spray equipment, using a 20% solution of sodium chloride at 90° F., with 15-lbs. pressure on the spray head. The effect of 1000 hours exposure to this salt spray test on two tanks is shown in Fig. 1. The X finish on the transformer tank at the right shows considerable deterioration and severe corrosion, although the photograph does not bring out the real severity of corrosion and attack on the finish. As an example, the finish was completely gone from the cover and from many areas on the tank wall. By comparison, the Coastal Finish on the transformer on the left showed no signs of deterioration and also no signs of corrosion.

Further confirmation of the improved salt spray resistance of mica-base finish over the X finish is illustrated in Fig. 2. After 2000 hours under the salt spray, a large area of the paint was gone in the case of the X finish (on the left) and corrosion was quite apparent, whereas with the mica-base finish there is no indication of corrosion.

One rather interesting result was the severe action of the salt spray on galvanized parts. This was in-

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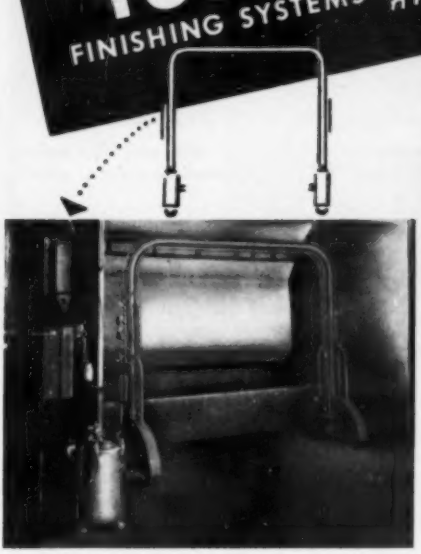

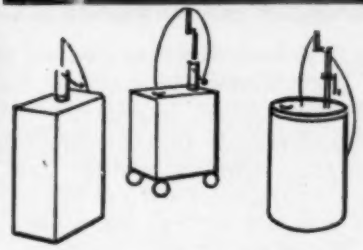

THE FINISHING SYSTEM AT THE PHILLIPS PUMP AND TANK CO. is designed for finishing a variety of objects from a portable carwasher (shown in process of finishing) to pumps and tanks used in service stations. Storage space in this plant is limited. Material has to move quickly from the assembly line through the finishing department to the shipping room. Young and Bertke engineers designed and installed a spray booth and oven that required a minimum of room and facilitated the movement of materials. In installing a finishing system in your plant, let Young and Bertke engineers design it so that *you* will save both time and money. Write us today.

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Fig. 3—Various finishes on hanger irons were exposed to 2000 hours of salt spray. The cadmium plated and Bonderized plus mica-base finish hanger (far right) showed no signs of attack.

dicated by white deposits on the hardware. As a result it was considered desirable to test the mica-base finish on hanger irons for distribution transformers, where standards now call for galvanizing.

Eight Different Finishes and How They Rated

The test samples are shown in Fig. 3 and include (left to right): galvanized; cadmium plated; galvanized and Bonderized; cadmium plated and Bonderized; galvanized plus mica-base finish; cadmium plated plus mica-base finish; galvanized and Bonderized plus mica-base finish; and cadmium plated and Bonderized plus mica-base.

After 2000 hours exposure to the salt spary, it was found that the zinc had been completely consumed on the galvanized hanger irons, with iron rust spots showing through the white deposits of zinc salts. The cadmium-plated irons showed fairly good resistance to salt spray but small areas were attacked. The iron was not corroded. The galvanized and Bonderized, and cadmium-plated and Bonderized iron showed up extremewell. The galvanized and painted, and cadmium-plated and painted irons showed extremely good resistance to salt spray, with practically no indications of attack. Of all the combinations tested, the cadmium-plated and Bonderized plus mica-base finish irons showed absolutely no signs of attack after 2000 hours.

For these tests, ordinary production hanger irons were used. It is realized that the salt spray is a grossly accelerated test and that galvanized or cadmium-plated parts stand up well in marine and most industrial atmospheres. However, it is felt that the Bonderizing plus mica-base finish greatly enhances the protection already given by the electropositive metal.

Tests That Show Finish's Resistance to Acid

The test for resistance to acid was performed in the equipment shown in Fig. 4. Test panels were periodically exposed to an acid bath and then to air. The equipment is motor-driven and has a cam-op-

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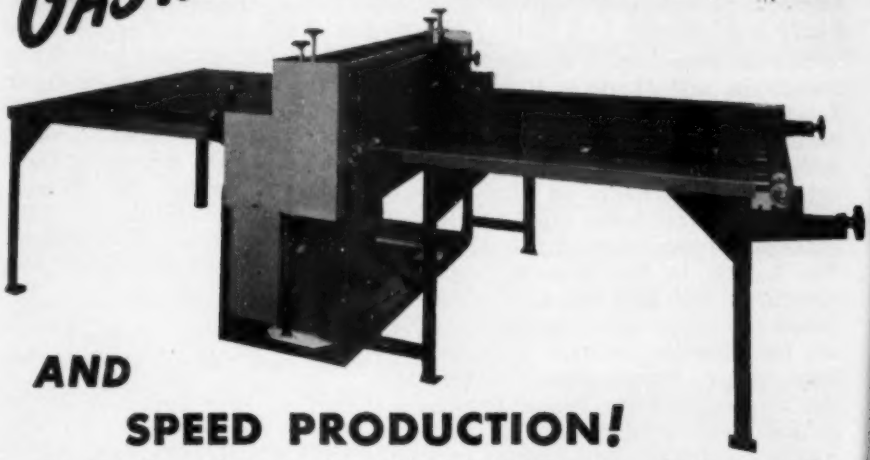

AND SPEED PRODUCTION!

The benefits to be gained by using the Rollacoat method of applying finishes and protective coatings, to practically any type of flat materials, are three-fold. In the first place coating speeds are greatly increased over those of any other method and are governed largely by how fast the coated materials can be handled or dried. Secondly, the coverage per sq. ft. per gallon is usually at least 50% greater, the only loss being the paint removed from the rolls at the end of a run. In the third place you obtain finer quality of finish due to accurate control of thickness and evenness of coat.

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erated arm on which the panels are hung. It operates on a 4-hour cycle, two in the solution and two in the air. For the test a 0.5% solution of hydrochloric and sulphuric acid is used.

The X finish has excellent acid resistance and there is little difference between it and the mica-base finish after 500 cycles exposure or a total of 1000 hours in acid and 1000 hours in air. Deterioration first takes place at the extreme bottom edge of the panel, due largely to the increased concentration of acid at this area. When the panels are removed from the bath for air exposure, drainage takes place. Evaporation of water during the drainage period results in increased concentration of acid at the bottom of the panel.

The alkali test is performed in a duplicate set of equipment. For this test an 0.5% solution of sodium-hydroxide is used. There is quite a distinct difference between the effect of alkali on the X finish and the mica-base finish. In the case of the former, the three coats were completely removed, exposing bare metal which, at the end of 500 cycles, had begun to show a rust stain. In the case of the mica-base finish, under the same exposure, some deterioration of the final coat was shown; however, all three coats were intact and no signs of corrosion of base metal were observed.

Weather-O-Meter Tests (Accelerated Exposure)

It is generally considered that one week's exposure to Weather-O-Meter conditions is about equivalent to outdoor exposure for a period of one year under average conditions. In the Weather-O-Meter test, the panels are attached to a cylinder and rotated continuously. They are exposed to periodic cycles of one hour in fog and three hours under ultra-violet light. After 12 weeks exposure neither finish showed severe deterioration. It was noted that the final coats on both the standard and mica-base finish showed some dulling and evidence of light chalking. Tests are being continued to obtain the ultimate life of the two finishes under this condition.

Outdoor Exposure Tests; Florida and Calif. Coasts

Panels of the 3-coat X finish and the 3-coat mica-base finish were prepared and exposed on both Florida and California Coasts. At the end of 18 months none of the mica-base panels had shown signs of corrosion. The other panels showed edge corrosion and rust creepage to the extent of about 1/16-in. in from the edge. Some chalking had taken place on both panels. This was particularly true for the panels exposed on the Florida Coast. It is interesting to note that the panels exposed on the California Coast at San Francisco still have most of the original gloss.

This 3-coat, mica-base, paint system of the baking type was developed specifically for pole-type distribution transformers. The goal was to develop a finish that would better withstand the widely diverse atmospheric conditions under which these transformers must operate. The results of laboratory and field tests show that the Coastal Finish

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is superior to the finish previously used on distribution transformers; that, as a result, the service life of the finish will be more than doubled. Many industrial-type paint systems have been tested but the mica-base system described shows superiority over all examined to date. The tests reported are only a short summary of the many tests that have been made on this system.

It's An Uphill Fight to Sell Quality Finishes

PAUL BLACKMORE, who wrote that splendid article in the August issue of *Industrial Finishing* Magazine, "How Much is a Gallon of Paint Worth", is a chemist and naturally he writes from the chemist's viewpoint. Well, let's look at this from the salesman's angle. As one who has spent many years in the business of selling industrial finishes, I know why the paint salesman doesn't always follow the practice advocated by Mr. Blackmore.

Incidentally, let me express my wish that the magazine "Purchasing" reprint Mr. Blackmore's article. It should be required reading by every purchasing agent and by every individual who hopes to become one.

After years of ramming up against the problem of trying to convince the average purchasing agent of the value of spending a little more in order to get a lot more, and usually ending up defeated, depressed and wondering why I stay in this business, I have just about given up the battle of trying to be a champion of better quality materials. Usually it's easier, quicker and more profitable for me to sell the customer a product in the price range he is accustomed to paying and let it go at that.

The average buyer—a busy man, of course — will declare that he knows nothing about paint and moreover he hasn't the time to learn. I might add too that very few have the inclination. As for performance—the number of units a gallon of paint will cover satisfactorily — I think everyone will agree that, with the exception of large concerns in mass production on a few products, it is difficult if not impossible to figure painting costs on a unit basis.

For example, let's look at lacquer thinner. It's elementary that the purpose of lacquer thinner is to thin lacquer. Now the speed with which the lacquer is cut depends upon the solvency of the thinner. If you want to get technical you can call on a chemist to test it. I have in mind two simple ways to determine the solvency of a thinner. One is to use it to remove paint that has been smeared on your hands. Some thinners will take it off easily and quickly; others will require considerable rubbing. What's the reason for the difference? One is a solvent and one is a diluent. A diluent is an extender, and usually cheap.

The other way to test thinners is to actually thin the lacquer with them. Let's assume that you have two quarts of lacquer to thin. With thinner "A", costing 68 cents a gallon, you use one quart of thinner to bring it down to spraying viscosity. With thinner "B", costing 90 cents a gallon, only one pint is required; in other words, half as much. Which thinner is cheaper? Figure it out for yourself; I have done it so often for purchasing agents that I am tired. Naturally, your answer will be to the effect that it is cheaper to use the better quality products—only it's hard to get your story across, and keep the buyer sold.

If you get the finishing foreman to "carry the mail" for you, the purchasing agent may think you are taking the foreman out. On the other hand,

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if the purchasing agent is convinced that you're right, he may hesitate to buy a product that costs more per gallon because someone above him may ask: "What did that salesman give our buyer? Hair oil?".

My conclusion is that it's a rough business. But occasionally I see a ray of hope. I have a very good friend who buys a real quality paint because he has found out the hard way that it keeps him out of trouble, whereas cheap paint gets him into trouble. I have another friend who recently found that by paying 40% more for paint, he lowered his cost of paint per unit by 15 cents. Then the head of his firm hurled this challenge at the salesman: "Repeat your test; there's a trick to it." No wonder I'm tired.—*Salesman.*

Why Dirt Fell on Wet Finish

Dirt and lint fell from overhead conveyor onto wet lacquer but this difficulty was solved.

WHAT KIND of finishing problem have you experienced and solved recently?" I asked as I talked to the finishing foreman of a completely conveyorized furniture factory.

"Well," he replied, "We have problems every day. Some of them can be solved as we go along; others require more time and study.

"One of our big problems was dust, lint and foreign particles, such as pieces of dried lacquer and small strands of cotton waste, falling on freshly coated surfaces before they dried dust free. Our spray area is pressurized but due to the layout of the building, this being an old plant, and due to the fact that the conveyor system is double decked to allow sufficient travel time for drying the finish, it is impossible to enclose the area just beyond the top coat spray room, where the furniture travels some distance for the finish to flash and dry dust free.

"By close observation we discovered that the greatest accumulation of dust and foreign matter seemd to drop on wet lacquered surfaces just below the joints in the overhead conveyor rail. These joints are welded and reasonably smooth, and there is no apparent rubbing, scraping or jolting as the wheels pass over them but the dust and foreign particles did accumulate at these points."

"Interesting; how did you solve it?" I asked.

"Come out to the plant, and I'll show you."

It was a simple solution. Starting at the pressurized spray room they installed a double deck of 3/16-in. plywood panels 30-in. wide, extending along the conveyor for 180-ft. The lengthwise edges of the panels (at sides) are reinforced top and bottom with two pieces of 3/4-in. x 3/4-in. stripping.

One deck of plywood is mounted on top of the conveyor rail to catch the dust particles falling from the upper conveyor line. The other deck is below the conveyor rail, and has a lengthwise slot along the middle to permit the offset carriers to pass through. Both plywood decks are held in place with vertical wires which extend through both panels and fasten over the conveyor rail.

Once a week, when the conveyor line is empty, workmen using compressed air guns, blow off both plywood decks to remove accumulated dust and foreign particles. The floor area is swept each morning before work begins, and again during noon hour. Sweeping compound or wet sawdust is scattered over the floor and a wide push-brush is used for sweeping. The overhead protection and frequent cleaning solved their problem.—S.M.

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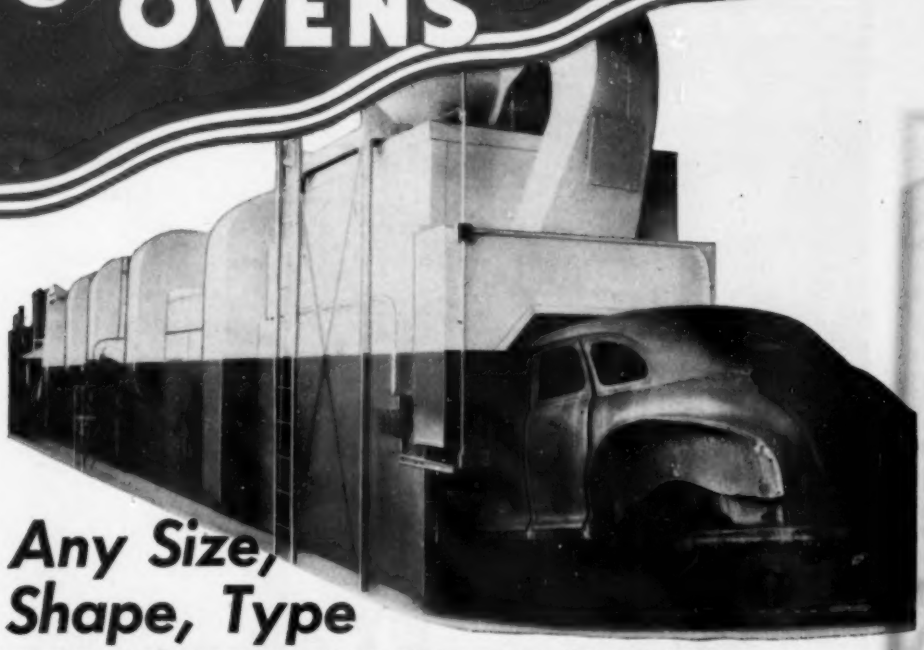

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Aluminum Type Bake Enamel by Standard Varnish Works

"Wartime allocations of critical metals and metal plating will find us better prepared this time than we were in 1941," according to a statement issued last month by Mr. M. H. Corbin, President of Standard Varnish Works, 2600 Richmond Terrace, Staten Island 3, N.Y.

"Since the end of World War II, we here at Standard, and most of our fellow manufacturers of industrial production finishes have devoted considerable research and development to this important problem. Each day sees significant advancements in the field.

"In our own laboratories, for example we have developed a finish that is taking the place of expensive and scarce cadmium plating in instances where metal-to-metal abrasion is a factor. This new finish, an aluminum type baking enamel is among the first significant developments of Standard's research on the shortage problem. Others are expected to follow.

"We anticipate that the finishes industry will even further accelerate development of new materials and processes which will serve the twofold purpose of 1) freeing critical metals for government use and 2) providing equal or superior protective properties where a coating-for plating substitution is made," Mr. Corbin's statement concluded.

Appearance Measurement of Materials; 1951 Training Course

Plans are being made to repeat for the third year the course on appearance measurement of materials which is given at the Henry A. Gardner Laboratory, 4723 Elm St., Bethesda, Maryland, under the direction of Mr. Richard S. Hunter, Chief Optical Engineer. The course will be given at least three times between November 1950 and June 1951. One course is planned for November 27 to December 1. Others will follow as applications are received to fill them.

Each course lasts one week and there are two lectures each day. Laboratory periods allow for work on different appearance-measurement instruments, preferably on specimens brought by the students. The course is designed to help technologists in different fields make and interpret measurements of the appearance of materials such as paints, papers, ceramics, leathers, plastics, textiles, rubbers, oils, foods, etc. It is planned to limit each class to 20 students, the maximum number that can be accommodated for the laboratory work and individual discussion which is provided.

The course is educational. Primary aim of the course is to explain appearance materials with respect to physical causes, psychological appreciation, and psychophysical measurement. Lectures are also given on instruments, their components, and trouble shootings, and on basic techniques for preparing and handling materials for measurement.

John F. Roche of Binks Mfg. Co. Passed Away Oct. 15

Mr. J. F. Roche, Chairman of the Board of the Binks Mfg. Co., Chicago, Ill., died on October 15, 1950. Mr. Roche was 76. His business life started in 1900 when he joined the Montana Power Co. In 20 years with that company he worked his way up to Manager of the Butte District.

Later Mr. Roche went to Hotpoint (General Electric) in Chicago, as Assistant to the President. His next advance was to the Apex Electric Distributing Company as Vice-President. Here, Mr. Roche applied his knowledge of advertising and distribution with outstanding success.

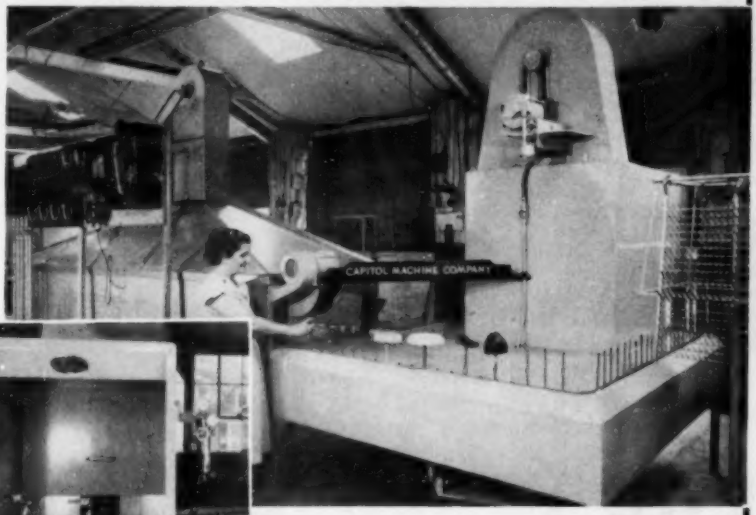
In 1929, Mr. Roche accepted the position of Executive Vice President and membership on the Board of Directors of the Binks Mfg. Co. The following years were some of the toughest in American industrial history. In addition to successfully piloting his Company through the depression years, Mr. Roche served on the Advisory Board, National Emergency Council, for Illinois Division of N.R.A.; devoted much time and energy to the National Association of Manufacturers, the Illinois Manufacturers Association and other business and civil groups.

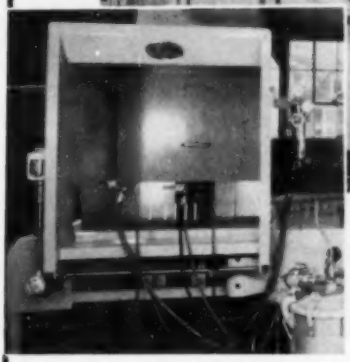
In 1936 Mr. Roche was elected President of the Binks Mfg. Co. Under his guidance Binks products improved and were standardized, and the manufacturing facilities were modernized and expanded.

The development of the Binks Company from a small, relatively unknown firm to one with an international reputation for quality spray nozzles, is indeed a glowing tribute to the work of Mr. Roche.

In April, 1949, Mr. Roche accepted the Chairmanship of the Board of Directors. His son, Burke B. Roche, became President, to carry on the work started by his father.

EXCEPTIONAL SAVINGS on finishing costs with Capitol high-speed electric automatic spray-bake equipment. Machine pays for itself in three months.





● Ideally suited for finishing lipsticks, clocks, pens, pencils, door knobs, etc. Approved by New York City Board of Standards and Appeals.

Here's How: Speedy production — Over 200 pieces per minute. Small space required — as little as 6′ x 18′. Quick change adjustments — only 10 minutes! Machine cost recovered in few months by actual case histories. Absolutely uniform quality controls.

Ask Now For: Details on these and other exclusive features. Or better still, bring in or send in your own work samples for test run and estimate. No obligation.

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The CAPITOL MACHINE COMPANY

DANBURY, CONNECTICUT

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Photograph, courtesy of General Research & Supply Company.

Silk Screen Stenciling

BECOMES A MECHANIZED PROCESS

By J. I. SIEGELEISEN
Technical Consultant

IT SEEMS such a simple job to mechanize the movement of a squeegee across a screen, yet it has taken years for the silk-screen industry to come up with a practical automatic silk-screen printing press. Why there was such a lag is hard to understand. Certainly it wasn't because we didn't have the engineers and machine designers to do the job. While silk-screen printing was allowed to mature as a hand craft, other printing processes made tremendous strides in the development of new methods, faster presses and more versatile systems to do black and white and color printing—and do it faster, cheaper and better.

One answer for this neglect may be that not enough venturesome people with money were interested in silk-screen stenciling and printing to give it the attention it re-

quired. Well, there is every indication that enough people are interested in silk-screen printing now.

About 15 years ago the silk-screen process left the exclusive domain of sign painters and poster printers and began to reach far into other fields. Extension of the process has been prodigious. Today the silk-screen process plays an important part in many different types of industries. Textile people employ the process to a great extent for printing on fabrics.

Prints Decorations on Novelties and Toys

Manufacturers of novelties have found, in this process, just what they had always been looking for in their quest for a method that would print on such diversified materials as wood, cloth, metal, glass, leather, etc. The toy industry is now making extensive use of the process for applying designs and decorations to fabricated or prefabricated materials that go into the making of such items as sleds, wagons, game cloths, etc. The furniture industry too has come to realize that here is a process which is inexpensive to install and operate and which can be used effectively on a variety of items such as children's toy chests, tables, bridge sets, nursery furniture, etc.

Today lamp shades are silk-screened. So are decorations and emblems on T-shirts, children's shirts and sweaters. Hopalong Cassidy rides high, wide and handsome on kiddies' neckties and scarves. Yes, they are silk-screened too. Striping and decorations on mirrors and glass frames are applied by the silk-screen method.

Lamp Shades, Shirts, Animal Fur, "Wires"

New industrial applications for the stencil process are uncovered every day. It is really difficult to mention them all. As a random example, silk-screening is even used on cheap rabbit skins. With spots painted in dye colors, rabbit skin magically turns into leopard fur. During the war, somebody hit upon the idea of experimenting with the silk-screening of electronic circuits. It worked. It was found feasible to lay a meshwork of "wires" composed of lines silk screened with a heavy metallic paint that conducts an electric current readily and uniformly. The process resulted in phenomenal savings in labor costs. Miscellaneous applications of silk-screen process work include flocking, printing with etching resist, spot and all-over varnishing, gluing, etc.

Manual Process for Small Shops

Since its inception about 40 or more years ago, when sign painters discovered the process, silk-screen stenciling and printing was considered a small-time business. It was kept secret at first. Naturally, this self-imposed secrecy prevented the process from developing and benefitting more people through wider use and experimentation. The process was ignored by other graphic arts. They looked down their noses at this hand craft; they considered it an interesting curiosity but did not take it seriously or consider it a threatening competitor.

Now, the picture has changed. It is the industrial uses of the silk-

The McCormick automatic silk-screen printer in operation. This photograph supplied through courtesy of the Lindsay Scott & Company, Inc.

screen process, rather than its advertising applications, that interest so many people. The management of industrial firms see that here is a way of applying, uniformly and quickly, any viscous material (ink, adhesive, paint, resist, lacquer or enamel) on any kind of surface.

At the beginning of this article I said that there was a lag in the mechanization of the process. Most silk-screen process work is still done by hand. Until recently, all squeegee work was done manually.

Several silk-screen machines appeared on the market about 15 years ago, but they were not designed by engineers. The machines I saw in operation looked as though they had been put together from spare parts with borrowed tools. They were awkward contraptions—inventor's models—with noisy flywheels, bicycle chains, protruding bolts, etc. They looked more like Rube Goldberg drawing-board doodles than something made according to the drawings of a machine engineer. A number of other presses were efficient but they were built for the exclusive use of one firm and were not put on the market for the public.

Modern Production Machines Now Available

The picture is no longer as dismal as it was. I have seen demonstrations of two machines which by far excell those that were prematurely hatched by the basement shop inventors. I refer to presses illustrated in this article. I believe

YOUR USE OF

Flock

MAY PUT MONEY IN YOUR BANK, TOO!

This appealing 12-inch puppy was hollow-formed of molded rubber—tapped with a coin slot—and finished with a true-to-life furry coating of Claremont cotton flock. For least cost, it goes to market

Bingo Cocker Spaniel Bank shown thru courtesy of A. N. Brooks Co. 500 So. Michigan Ave. Chicago, Ill.

as an example of sound, thrifty manufacturing and—from the consumer's point of view—as a "pet" cache for coins. No doubt about it, Claremont Flock works product-finishing wonders—and the savings it accomplishes, are as attractive as the results it achieves.

Complete details, color cards and test samples of Flock furnished upon request. Inquiries invited. Write direct to

CLAREMONT WASTE MFG. CO.

The Country's Largest Manufacturer of Flock

CLAREMONT, NEW HAMPSHIRE

A few typical examples of silk-screen printing on circular surfaces.

they are worthy of consideration for anyone who is interested in silk-screen process work, but who is impatient with slow production methods.

The General Press will do 1500 impressions an hour and it is capable of producing sharp uniformly squeegeed prints in fine hairline register. This machine is excellent for thin stock but is not adapted to printing on rigid boards or panels. While the General Press is a "natural" for decalcomanias it can also be used extensively for any label work, flexible plastics. paper and light cardboard, and even thin-gauged metal. The type of stencil to be used is optional. In other words you can print with a photo-stencil, lacquer block-out stencil, film-cut stencil, etc. Also, there is equal latitude as to what medium you can print with. This includes paint, lacquer, enamel, dye, varnish, etching compounds, adhesives and so on.

Production Setups Have Conveyor and Oven

The machine can be adjusted to individual sheets or to continuous roll stock. To keep up with fast production, a conveyor and infrared heating unit can be set up to make it practical to keep the press going without waiting for the natural air drying of process paints.

Printing media are available that are fast dryers and, with the proper heating units, there is no reason why a continuous production of 1500 impressions an hour cannot be maintained. The pressure of the squeegee can be controlled so that a heavy or thin deposit of paint is applied to the stock. An automatic mechanical registering device eliminates the manual element in registering of stock.

Machine That Takes Thick and Thin Stock

The McCormick Press, in my opinion, is probably more versatile. It is not confined to printing on thin stock. The machine can be adjusted to print stock or material of any thickness up to ½-in. thick. It will print on rigid or flexible stock — on wood, paper, plastic, cloth, metal, etc.

Other features of operation are that the squeegee can be set at any desired pressure, thus allowing the operator to control the amount of paint that goes through the screen mesh—this, in turn governing the thickness of the layer of paint de-

FINER FINISH SANDING AT A NEW LOW PRICE!

- Straight-Line Reciprocating Action—Leaves No Marks
- Only Two Moving Parts — Never Needs Oiling—Uses 110-120 v. A.C.
- Easy To Use—No Bearing Down — Continuous Use Doesn't Tire Operator
- Weight Less than 5 lbs.— Over-all Size, 3⅛" wide x 4½" x 7"
- Dust-Proof — Fool-Proof — Fully Guaranteed
- 21 Square Inches of Sanding Surface.

RUGGEDLY BUILT FOR ECONOMY-WISE INDUSTRIAL FINISHERS

The new Dremel Model 2000 is a fast-cutting, finish sander. It offers for the first time in the industrial field, a truly top-quality electric sander at a remarkably low price. Its rugged construction, trouble-free design, versatile performance—plus low initial purchase and operating cost—all demand your thorough investigation. Call your supplier, or write us for details.

DREMEL MANUFACTURING CO., 2404 18th St., Racine, Wisconsin

ELECTRIC DREMEL POWER TOOLS

EVERY SHOP NEEDS . . . EVERY SHOP CAN AFFORD THE NEW DREMEL ELECTRIC MODEL 2000 SANDER

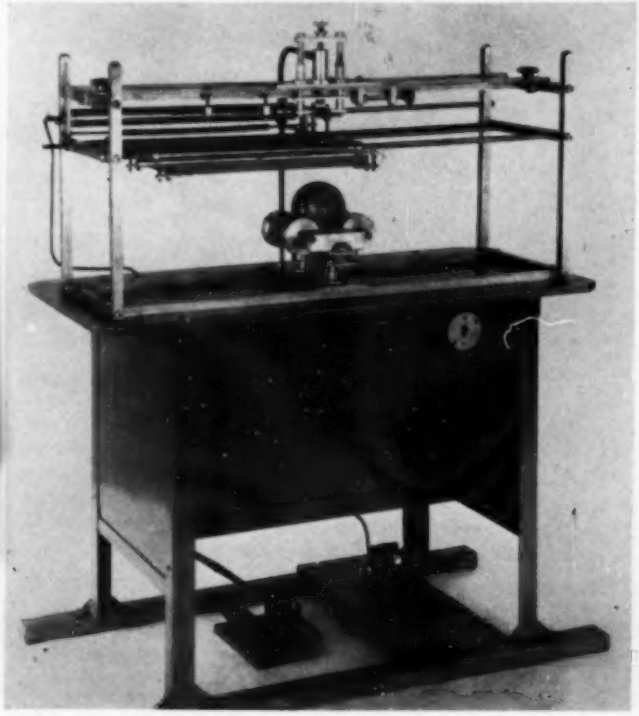
posited on the surface of what is being printed. Register is adjusted by micrometer turn knobs and is held fixed for the entire run.

The McCormick Press is a compact unit. It occupies little floor space; it is so constructed that most movable parts are covered; it is easy to make ready and just as easy to clean. It has three speeds—600, 900 and 1200 impressions an hour. In view of the fact that feeding is manual, the top speed of 1200 impressions an hour is about as fast as you want. In fact, unless you rig up a conveyor system and drying facilities, a problem would be created as to where to put all of the wet prints that come off the printing bed. If the prints are to air dry, a specially designed metal rack will greatly facilitate their stacking. With the proper artificial drying facilities, no such racks are necessary.

Future Developments in Silk-Screen Machines

It is my belief that these presses just mentioned will be the forerunners of other presses that will make their appearance soon. There is a need for dependable fast but accurate production methods. That need becomes more urgent as new industrial uses are found for silk-screen process printing. In printing advertising, a standardization

(Continued on page 70)



Screen printing machine for cylindrical and spherical objects of glass, metal, plastic, wood and rubber. Photograph, courtesy of Dependable Compressor & Machine Co.

NACROMER is an excellent substitute for Pearl Essence where cost is a factor and where the high brilliance of natural pearl is not necessary.

It is—

- **Stable**
- **INERT**
- **NON-CORROSIVE**

Samples and literature sent on request.

THE MEARL CORPORATION

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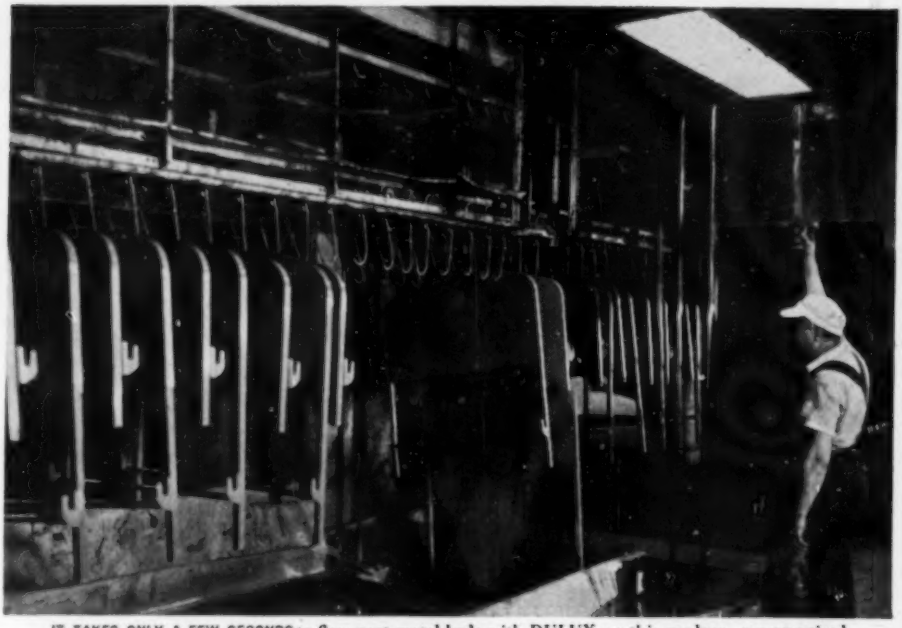
"World's Largest Producer of Pearl Essence"



IT TAKES ONLY A FEW SECONDS to flow-coat metal beds with DULUX on this modern, conveyorized production line . . . but the special Du Pont formula gives years of protection! Practical resistance tests have proved that DULUX has unsurpassed resistance to damage from temperature extremes, spilled liquids, hard knocks and other deteriorating influences to which metal-furniture finishes are normally subjected.

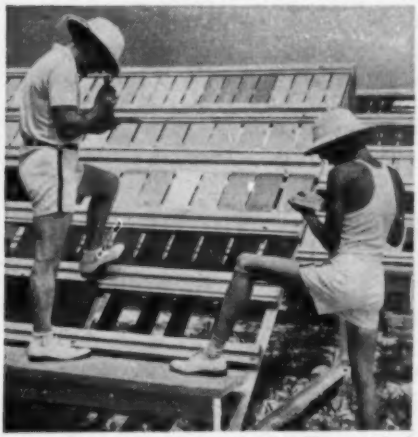
BED TIME STORY WITH A BRIGHT FINISH

DULUX for metal beds—typical of the 1200 Du Pont finish formulas working for industry today

● With a special DULUX finish formula, developed by Du Pont chemists in cooperation with a leading bed manufacturer, these metal beds for institutions can be flow-coated in a matter of seconds as they move along conveyors. The finish is then bonded to the metal at high temperatures . . . produces a rich, durable gloss that spells value to dollar-wise purchasing agents for hospitals, schools and hotels.

Du Pont finishes like this have helped hundreds of manufacturers cut production time, reduce cost. Du Pont finishes make products look better, wear better, sell better. More than 12,000 of them have been formulated by Du Pont chemists over the last twenty-five years to satisfy the varied and specialized requirements of industry. Remember, whatever *your* finish requirements, you can get expert help by contacting the Du Pont sales technician in your area . . . or by writing E. I. du Pont de Nemours & Co. (Inc.), Finishes Division, Wilmington 98, Delaware.

TRUCKS BECOME TRAVELING BILLBOARDS building goodwill toward the organization behind them, when Du Pont DULUX Enamel goes on. Both bus and truck fleet operators have learned that tough, handsome DULUX is in a class by itself when it comes to standing up to rough treatment on the road. Its long-lasting good looks can mean better public relations, less paint shop "down time," lower maintenance costs.



KEEPING 'EM DOWN ON THE "FARM"! Not satisfied with exacting laboratory tests alone, Du Pont paint chemists test exterior finishes under all kinds of weather conditions at Du Pont "paint farms" located throughout the country. Here paint samples on test panels are exposed, sometimes for years, to the most severe outdoor exposure . . . must measure up to highest standards.

HELPING MAKE MILLIONS OF SALES! DUCO and DULUX Furniture Finishes provide a rich, satin sheen that is the hallmark of quality furniture . . . have helped to sell millions of pieces at all price levels. Moreover, these outstanding Du Pont finishes resist discoloration, cracking, crazing and alcohol spillage for years . . . enhance the reputation of both the manufacturer and the retailer.

DU PONT
REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

DEPEND ON DU PONT FOR BETTER FINISHES

PAINTS • LACQUERS • ENAMELS • VARNISHES
THINNERS • STAINS AND SPECIAL-PURPOSE FINISHES FOR INDUSTRY

DUCO AND DULUX ARE REG. U. S. PAT. OFF.

of sizes is not practical. During the course of one week, the typical silk-screen shop may be working on such diverse projects as 11x21-in. car cards, 40x60-in. window displays, small-sized Christmas cards, 10-ft. banners, etc. Probably no one machine could be built to take all of these variations.

For specialized industrial uses, standardization is possible due to quantity production of a given unit. For instance, glass manufacturers have found it practical to build special machines to do a specific job of silk-screening on bottles, jars, and all sorts of containers. Similarly, a machine will be found to be practical where standardization is at all possible; and standardization is possible in large quantity production.

Some industrial finishers will do well to consider the installation of mechanical silk-screen printing presses. The introduction of machine printing will put the silk-screen process on an equal basis with other printing crafts, and give the additional advantage of being the most versatile medium of them all.

The time has come for large printing machine manufacturers in the United States—firms that supply the graphic arts field with the most marvelous presses in the world—to get busy and develop new and better silk-screen printing presses. It should prove to be a profitable venture for those who sell the machines and for those who buy and use them. [END]

If you want to
cut product-identification costs . . .

CONSIDER SILK SCREEN PRINTING . . .

Any design in any number of colors can be applied DIRECTLY to metal, wood and plastic. Economical for large and small designs in any quantities. Silk screening gives clear sharp detail and a tough permanent finish that withstands handling, abrasion, outdoor exposure.

Ask our specialists for advice on the next job. We can supply everything you will need for fast, economical product-MARKING.

Write Department IF 11-50 for Further Information.

Hot Lacquer Process

A NEW finishing technique, the hot-lacquer process, is attracting widespread interest in the finishes field not only because of the economies it offers to the finishing industry but also because it offers that industry a means of by-passing the serious and ever-growing shortage of volatile ingredients, J. B. Wiesel, Hercules Powder Co., told the Wood Office Furniture Institute in Chicago last month.

Hercules is a producer of nitrocellulose and synthetic resins for lacquer.

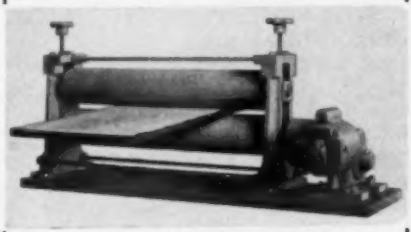
"In the face of unprecedented demand and the resulting shortages in some lacquer ingredients, the hot-lacquer process offers an important production advantage. By the use of this process scarce solvents and thinners can be stretched to give more gallons of finished lacquer, which will cover more square feet of surface area. Adoption of this technique thus can benefit the lacquer manufacturer, the finisher, and assure the ultimate consumer of the continued availability of quality finished furniture".

Mr. Wiesel pointed out that in Europe, during World War II, when some solvents were scarce and expensive, the hot lacquer process was extensively used, especially in Sweden and Holland, in finishing a large volume of furniture. The war-time development of hot spray lacquers in Europe was born of necessity but the widespread use of this process there today is proof of its value under normal conditions, he said.

In the hot-lacquer process, heat is used instead of volatile lacquer ingredients to make the lacquer thin enough to spray, spread evenly, give good coverage in a minimum number of coats, and dry fast.

Mr. Wiesel said that preliminary returns from a finishing industry survey indicated that the prominent rea-

New . . . . .



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A Precision Built Laminating Machine For Plastic Veneer

- Has specially processed rubber rolls, 35 Durometer reading, the proper rubber hardness for applying plastic veneers.
- Has easy positive hand adjustment, opening variable from 1/16-in. to 1½-in.
- Standard unit has 5-in. x 30-in. rolls—overall size 10-in. wide x 45-in. long x 16-in. high.
- Production approximately 15 lineal ft. per minute. May be used for wide variety of laminating operations.

LOW COST . . . .
DELIVERED PRICE—
$350.00 LESS MOTOR
$450.00 WITH AC MOTOR

Delivery within two weeks.

ORDER NOW!

FILMWOOD CORPORATION

46 No. 22nd St., Camden 5, N. J.

sons for adoption of the lacquer process on production lines were: Reduced material costs; reduced cost of application; production savings; and quality.

Among the users of hot lacquer which he quoted, one reported: "We have doubled our production on the spray line. With the cold-spray process we applied six coats of lacquer. With the hot-spray process we apply two coats and get better coverage. We also use 50% less thinners, and on top of this, we have also reduced re-work to a minimum".

The Hercules spokesman emphasized that the finisher can use hot lacquer and gain the cost savings while also retaining all the advantages which have led to cold lacquer being used to finish 75% of all wood furniture. He listed these advantages as: Lacquer lasts longer; it enhances the natural beauty of the wood; repairs and minor touch-up jobs are less costly and more satisfactory; and, perhaps most important, lacquer gives furniture eye and buy appeal.

Mr. Wiesel explained that until several years ago the lack of adequate mechanical equipment made the hot-lacquer process of little practical value in this country but that today highly efficient equipment is available.

"We estimate the total consumption of hot lacquer is currently well in excess of 100,000 gallons a month. With the commercial availability of lacquers especially formulated for use by the hot-lacquer process we expect consumption figures to show a continued and substantial increase. We expect this increase not only because it alleviates a current shortage of lacquer ingredients but mainly because finishers can gain important, permanent advantages for their production lines", Mr. Wiesel concluded.

DeVilbiss Men Moved Up

In line with a general program of improving the facilities and strengthening the organization to meet continuing product demands, the advancement of two sales executives in the industrial division of the DeVilbiss Co., Toledo, Ohio, is announced by Roy A. Guyer, vice president in charge of sales.

Emil E. Frey and Henry M. Kidd.

Emil F. Frey, now in his 34th year with the sales organization of DeVilbiss, moves upward from his former post of assistant sales manager to become director of sales promotion and advertising. At the same time, former assistant sales manager Henry M. Kidd becomes sales manager of spray equipment sales, having progressed through many steps in the sales division during his 16 years of association.

GOOD FINISHES START HERE

The quality of the filler is all important in building a good finish. Reliance Fillers have proved they are trouble free, high-quality in finishing rooms throughout the country.

Reliance Fillers reduce easily with ordinary naphtha; do not settle hard; pad-in and wipe-off without stickiness; fill the pores flush; dry quickly; add fullness and plumpness to the top coats; do not bubble, puff or shrink; produce clear, non-gray, permanent colors. In short, they do all that is expected of the best filler.

We make many types of fillers . . . each best suited to a specific need. A survey of your filler requirements will permit us to prescribe the right filler to insure your getting a good finish.

For additional information address 4732 Crittenden Dr., Louisville, Ky.

Rely on Reliance

RELIANCE VARNISH CO., INC.

AFFILIATED FACTORIES IN

LOUISVILLE, KY.
CHICAGO, ILL.
ROCKY HILL, CONN.
ASHEVILLE, N. C.

Modernized Setup for

At left is spray booth wherein the top coat of white gloss enamel is sprayed on toilet seats and lids. Then the seats and lids pass through a drying oven in the background.

WE ARE convinced that a product becomes known by the finish it keeps. To produce a worthwhile water-resistant finish it is necessary to use quality coating materials and efficient methods of putting them on and drying them. To do the job on a production basis and economically, it is necessary to have a conveyor system and drying ovens.

Oil-Base White Filler Is Dipped and Wiped

All of the toilet seats and lids we manufacture are made of hard, close-grained woods such as gum, maple, beech and birch. We have found it decidedly advantageous to hand dip a white oil-base filler which is allowed to air dry for about 15 minutes before it is wiped off. This dipping and the follow-up wiping takes place on the first floor just off the machine room. Of course, all seats and lids are sanded to a smooth surface in the white and blown or wiped clean before application of finishing material.

After the excess filler is wiped off, stiff wire hooks are attached to the undersides of seats and lids so they can be hooked to an overhead chain conveyor. This conveyor

By WARREN BRAUN, Finishing Foreman, Knott Manufacturing Co.

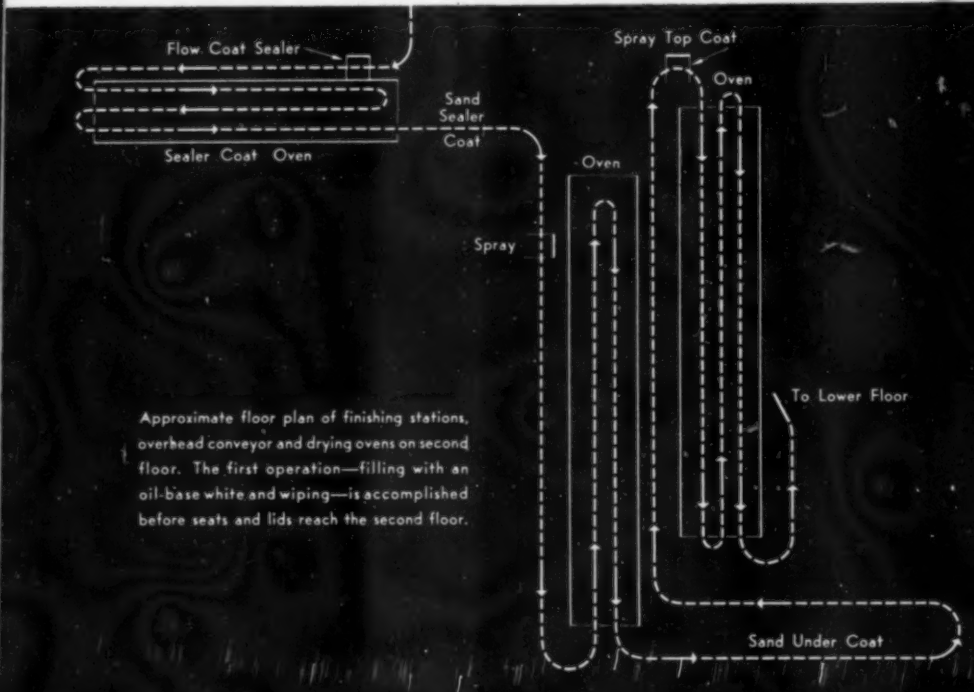
Finishing Toilet Seats

is driven, through a variable-speed drive, at 26-in. per minute. The conveyor carries seats and lids to the second floor where they pass through a flow coater which automatically drenches them with a clear oil-base phenolic-type sealer.

The sealer material is low in solids so that it will readily penetrate the wood and seal the pores to keep out any moisture. If this were not done moisture would cause the wood to swell; as a result the enamel undercoat and the top coat enamel would crack and probably chip off or peel. The sealer material is formulated especially for wood products that are to be used in bathrooms and kitchens where the wood is continuously subjected to moisture and extremely high humidity due to steam.

The sealer-coated seats and lids travel for 20 minutes before they enter a drying oven through which they travel for three hours in a temperature of 120° F. Just after leaving the oven the sealer coat is lightly sanded with No. 4/0 sandpaper.

Seats and lids are wiped clean after being sanded. Then they are returned to the conveyor which carries them through a spray booth



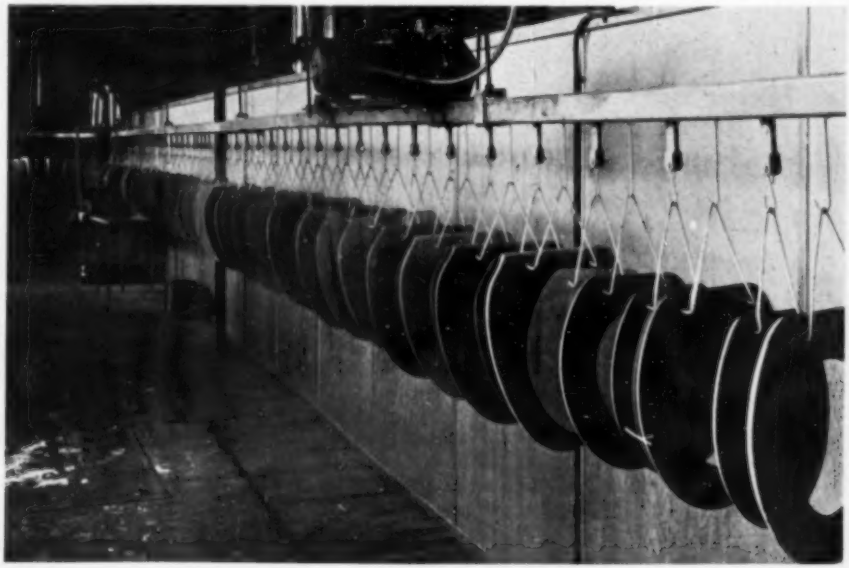
Approximate floor plan of finishing stations, overhead conveyor and drying ovens on second floor. The first operation—filling with an oil-base white and wiping—is accomplished before seats and lids reach the second floor.

where a flat white undercoat material is sprayed over them. This material is sprayed with an atomizing pressure of 65-lbs. and fluid pressure of 30-lbs. We use the material at a viscosity of 32 seconds at 78° F., as measured in a No. 4 Ford cup. The spray painted seats and lids travel for 20 minutes to allow the undercoat to flow out and begin to air dry before entering the oven where they travel for two hours at a temperature of 150° F.

Gloss Enamel Top Coat Sprayed and Oven Dried

The undercoated surfaces are sanded with No. 240 sandpaper and carefully wiped clean. The seats and lids are again hung on the overhead conveyor to travel to the top coat spray booth. Here a gloss enamel (viscosity, 28 seconds at 78° F., as measured in a No. 4 Ford cup) is sprayed at an atomizing pressure of 80-lbs. and a fluid pressure of 30-lbs.

The enamel coat is allowed to flash (air dry) for five minutes before the seats and lids enter a drying oven wherein they travel for three hours at a temperature of 130° F. Upon leaving this oven, the work travels for 45 minutes to the first floor where it is inspected and hardware is applied. Then the seats and lids are assembled. Completed toilet seats are packed in individual corrugated boxes ready for shipment. With this system our finishing production is 300 complete units per hour. [END]



Moving from left to right, seats and lids that have been filled with white filler, wiped and dried, are passing through the automatic flow coater shown in background at the left. Here a clear waterproofing sealer coat is flowed on. Baking oven appears at the right.

The Sign of

CLINCO

Highest Quality

INDUSTRIAL LACQUERS & ENAMELS

Have you a finishing problem? We'll be glad to solve it!

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1210 ELSTON AVE. CHICAGO 22, ILLINOIS

Finishing in England

Stain-filler combination; lacquer sealer; lacquer finish; gloss, rubbed and matt luster.

FURNITURE now manufactured in England is made chiefly of mahogany, oak and walnut. Full grain finishes are popular, with a variety of colors.

Various methods are used to obtain the desired finishes. Some factories have completely equipped conveyor and spray systems; others have spray systems but move the pieces manually; and some of the smaller factories still rely on all hand processes for making their products.

A combined stain and filler is normally used on the bare wood. After overnight drying a sealer coat is applied; this is followed, after a drying interval, with sanding and a coat of lacquer. When the lacquer coat has hardened, the piece is sanded and matched with spray color, subsequently receiving another lacquer coat.

If a good stain-filler and sealer have been properly applied under the lacquer, the piece is now ready for finishing, which is by sanding and pullover* solution—except in the case of the manufacturer who desires to give an added luster to his goods by burnishing [rubbing]. Most finishes are left bright [in gloss finish] but sometimes a semi-dull finish is obtained by applying a thin coat of matt [flat] lacquer over the finished surface.

Two years back, limed oak finishes with biscuit and pearl grey backgrounds were popular, but public taste has drifted away from them as it has for mahogany furniture. Walnut pieces are now favored, with oak following. The furniture trade is getting down to the task of providing attractive and reasonably priced articles, and it is felt that still greater values will be placed before the public within the next year.—*Richard Blanks. (Hyman Lazarus Cabinets, Ltd., London, England.)*

Author's Note: Regarding your query concerning "Pullover", this is a solvent used extensively in England for the purpose of flattening out the final lacquer and finishing, as an alternative to burnishing, or as it is termed in America, rubbing. When a medium finish is required this pullover solution is always used, as it does save a lot of time when flattening out. It is, of course, not suitable for the hard lacquer one would use when one was going to burnish or rub down, but it is eminently suitable for soft type lacquers which are easily flattened with pullover solution.

Burnishing is the process you know as rubbing, and is achieved by rubbing down with a wet-or-dry abrasive paper and rubbing up with a fine abrasive to bring a high-grade flat finish. —*Richard Blanks.*

*See note at end of article.

Producing Perchlorethelyne

The Columbia Chemical Division of Pittsburgh Plate Glass Co. has begun partial production of perchlorethelyne, an organic chlorinated solvent, at the firm's Barberton, Ohio plant. This product is an excellent metal degreasing solvent.

Basic raw materials used in the production of the chemical are chlorine and petroleum liquified gas. The solvent is produced through controlled thermal chlorination of the petroleum hydrocarbons.

Classified by underwriters as "noninflammable," perchlorethelyne also is less toxic than some of the other chlorinated solvents.

Finishing Classes, Jan. 8-12

Finishine Laboratories, Inc., 627 Tallman St., Syracuse 4, N.Y., announces that its free classes for finishers and refinishers will run five days, the next course to be conducted in Syracuse, Jan. 8th through Jan. 12th.

The courses have been extended to five days in order to provide more time for demonstrations of the methods used.

Twenty-five Million
Gallon Reasons
Why we lead the field...

IN

LACQUER THINNERS

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BARKER CHEMICAL COMPANY

One of America's Largest Manufacturers
of Lacquer Thinners

2258 SOUTH UNION AVE. • CHICAGO, ILLINOIS

High Speed Rubbing and Polishing of Furniture

Explaining the technique of rubbing and buffing finishes on furniture which is turned out economically, in large volume.

By ***FRED BOYNTON***
Finishing Consultant

ALL FINISH coatings (varnish, lacquer or synthetic) whether applied by spray or brush, have some slight physical defects. To rid the surface of these imperfections and to obtain the desired sheen, we have the rubbing operation. Rubbing is the final operation for a professional looking finish on furniture and fine cabinets. Practically any degree of luster may be obtained; it may range from a dull surface to one that has a mirror like luster.

Sanding and Smoothing From Bare Wood Up

The care observed in sanding the bare wood and in the application, drying and sanding of all preliminary coatings up to the top coat—this determines, to a great extent, the kind of rubbing and the amount of rubbing that will be required to produce the desired results. Proper and careful sanding of the wood in the white will do much toward giving the final finish a better appearance. The sealer coat must be sanded carefully and evenly throughout with fine sandpaper. The spraying of top coats should be such as to avoid any "wavy" film or "orange peel" effects. The smoother the film the easier it will be to rub it to a perfectly smooth surface of uniform luster.

When a dull luster or satin finish is desired, small imperfections in and under the film of finish are not so noticeable. However, if the finished surface is to be highly polished, the cabinets or furniture being manufactured should be carefully inspected before and after every operation in the finishing room. Any piece of furniture that shows evidence of pinholing, poor filling or other major defects should be set aside as a reject to be worked over later. On a polished surface these defects would be magnified and would cause a bad situation to look worse.

Film Thickness to Allow Rubbing

Enough lacquer or varnish must be applied to produce a film of sufficient thickness to withstand rubbing and polishing. An adequate film thickness must be left to give the cabinet needed protection after it is placed in service. Too many times cabinets and furniture leave the factory with the finish rubbed too close or too thin. Rubbed

Bringing Out the Natural Beauty of the Tree

IN FINE furniture, *finish* is the essential that assures retention of natural beauty. So, finish—the last thing to go on a product—is the first thing to think about when the product is planned.

Discriminating manufacturers of furniture, radio and television cabinets, and other wood products rely on a complete Zapon wood-finishing system. Aquanite stains; Zafil fillers and stain-fillers; Zaponite washcoats, sealers, and lacquers save time, labor, and material on the job of transforming majestic trees into fine furniture.

Your letter, wire, or phone call will bring a Zapon Customer Service representative and Zapon *Service From Every Angle* to tackle *your* finishing problems right on your own production line.

Service from every angle...

that's

ATLAS POWDER COMPANY

Industrial Finishes

Stamford, Conn. · North Chicago, Ill.

ZAPON

REG. U. S. PAT. OFF.

AQUANITE, ZAFIL, ZAPONITE
Reg. U. S. Pat. Off.

through places that are repaired by "frenching" do not look satisfactory nor wear well after they are in service for a while.

Rubbing Machines Speed Production

High speed rubbing and polishing on conveyor lines is not new. Two men, working on large surfaces with portable air-driven rubbing machines, can do a lot of rubbing. If the conveyor speed is fast, more men and machines may have to be added. These same machines can be fitted with steelwool pads for dulling the ends of furniture and other areas, at a point farther along the finishing line.

Rubbing departments that are not conveyorized may use the large stationary, adjustable, stroke rubbing machines to advantage. These machines are extremely fast, especially when the pads carry wet-or-dry sandpaper. Two or more tops may be rubbed at the same time. Portable hand machines and hand rubbing are used for the detail work, such as ends, edges, fronts and mouldings.

First Heavy Cutting; Wet Sanding

To produce a first class rubbing and polishing job, in mass production, the following operations may be performed in sequence:

Operation 1, Cutting: Prepare a sanding lubricant to use with the wet-or-dry sandpaper. One that I use is made by mixing one part of light paraffin oil to ten parts of Varsol or kerosene. Assuming that the surface to be rubbed is quite hard, use No. 300-A wet-or-dry sandpaper in a standard rubbing machine. Follow with No. 400 wet-or-dry sandpaper to remove any scratches caused by the coarser sandpaper. Sand thoroughly until a smooth even surface is obtained. After sanding, it is important to remove the oil and film residue from the surface. Use clean waste or rags for wiping off this residue.

Light Rubbing Followed by Buffing

Operation 2, Polishing: Mix rubbing compound with water or rubbing lubricant to form a sludge of thick creamy consistency. Apply this to the surface and rub with a rubbing machine that carries hard felt pads. Rub until the desired luster is obtained. Wipe off the residue with soft or waste rags, rubbing the surface briskly.

Operation 3, Buffing: Before buffing, clean the surface with a 50/50 mixture of alcohol and water. The surface need not be entirely dry before buffing. Buff at high speed with an Amcor No. 2 pad or its equivalent. The buffing wheel should be kept moving to avoid over-heating any part of the surface. Clean the buffed surface with a soft cloth moistened with the alcohol and water mixture before inspection. This buffing and wiping treatment will produce a mirror-like surface. No polish or wax need be used. This procedure will also eliminate any hazing or bloom—that is, if the film is reasonably dry.

To produce an attractive satin finish, the rubbing or cutting operation is the same as I have specified for a polished surface. By using an emulsion-type of lubricant or a

BETTER USE

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FURNITURE FINISHES

IT'S AMERICA'S MOST SENSATIONAL LACQUER FINISH

If YOU knew what WE know about furniture finishes, *Perfection Finishes Would Be Your Choice.*

And NOW . . . PERFECTION offers LACQUER . . . FLATTENED BY SYNTHESIS . . . giving the MOST POSITIVE rubbed effect appearance . . . in grades to suit your pocketbook and drying time.

With these outstanding advantages

CLARITY OF GLOSS LACQUER EVEN IN LOWER SHEENS • WILL EITHER GLOSS OR DULL RUB • SMOOTHNESS • WON'T HAZE OR SWEAT BACK • LIQUOR PROOF • A WAXED FEEL

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Perfection SYNTHETIC FLAT FINISHES

WATER-PROOF LIQUOR-PROOF

PROVEN QUALITY

LACQUERS

SEALERS

STAINS

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WOOD BLEACH

SYNTHETICS

PRIMERS

VARNISHES

Highly specialized finishes for the furniture industry since 1906.

For 44 years we have supplied the furniture industry with finishing materials — have worked closely with them in solving their problems — developed new and improved finishes to their liking — placed our modern laboratories at their disposal.

Today we are better equipped than ever to serve the industry with our greatly improved facilities — uniformity through laboratory control — expert technicians trained to do research and development work — modern equipment designed to produce better materials.

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PHILADELPHIA 34, PA. • WINSTON-SALEM, N. C.

All your finishing problems solved!

We invite you to avail yourself of our talents — our experience and wholehearted cooperation.

commercial wax that is made especially for the rubbing operation, the surface may need no further treatment. To give it more "life", use a machine that is equipped with hard felt pads. Lubricate the surface and add a small amount of rottenstone. Move the machine over the surface until the desired sheen is obtained. Usually a few strokes will be sufficient.

Instead of burlapping the ends, as is specified in some cases, a portable machine fitted with steelwool pads will do this job swiftly and economically. Maple and birch furniture respond to the steelwool and wax treatment 100%. No cutting operation will be necessary if proper consideration has been given in the preceding finishing and wood preparation operations.

Blooming and Hazing

The cause of blooming and hazing is due chiefly to careless workmen and negligent supervision. A really clean surface will never bloom or haze—provided, of course, first class finishing material has been used. All surfaces that are coated with lacquer or varnish have pores. It is necessary to have this film permeability; otherwise the film would break down in a short time.

If the rubbing or polishing sludge is not thoroughly cleaned off some of it will remain imbedded in the minute pores of the finish and often the surface as a whole, will have a greasy feeling. When the lubricant dries out, the fine dust that remains will produce a hazy appearance.

The blue film that appears on the surface is paraffin oil after drying.

Binks Buys New Plant in Los Angeles

To better serve the rapidly expanding industrial west, the Binks Mfg. Co. has purchased a substantial new plant, located at 4915 Pacific Boulevard, Los Angeles, California.

Front of Binks Mfg. Co.'s western plant at 4915 Pacific Blvd., Los Angeles, Calif.

According to Burke B. Roche, Binks' President, the new quarters were selected with two objectives in mind, to provide better service to Binks customers and to allow for future expansion of plant to keep abreast of industrial growth in the Los Angeles area.

The plant is designed for light industrial work. It will be operated under the direction of J. E. Roche, Manager of the West Coast Division, covering the seven States of California, Oregon, Washington, Arizona, Utah, Nevada, and Idaho. This office will be the focal point for all branch office work involving the warehousing and selling of standard spray finishing and water cooling equipment and the assembly of air compressors. Spray painting booths and water cooling towers will be assembled here from parts made in Chicago. There will be some sheet metal fabricating. It is expected that manufacturing processes will be expanded in the future.

Manager of Rinshed-Mason's Plant in California

Edward S. Hawkins, 38, chemical engineer with Detroit's Rinshed-Mason Company, manufacturer of automotive and industrial lacquers and enamels, has been assigned general manager of his company's recently-purchased western division factory and warehouse at Anaheim, California.

Since graduating from West Virginia University in 1935, Mr. Hawkins has been continually active in paint research. Before leaving for his California assignment he was director of all R-M automotive finishes research at Detroit.

Spin-Coating Machines

We are interested in spin-coating our rectifiers, and believe you could supply us with the names and addresses of companies manufacturing such equipment. The method we are considering would involve placing the articles into cage which could then be dipped and spun, first one way and then the other.—*S.T. Inc.*

See the ½-page illustrated advertisements on pages 95 and 103 of Oct. 1950 issue.

Screen Process Printing on Curved Surfaces

Several months ago, in this magazine, we saw quite an article on Silk Screen Processing which was of great interest to us. In this article the author mentioned that processing on flat work was generally common, but that to process on curves was patented. What I am writing you about is, can you furnish me with information on processing on curves, such as glass, curved plastic, etc.?—*K.S.Co.*

A machine for doing this work is made and sold by Dependable Compressor & Machine Co., 157 W. 21st St., New York 11, N.Y.

Roller Coater

On page 56 of the September issue, a roller coater is described for coating flat surfaces in sheets. We would appreciate the name of the manufacturer of this coater.—*C.P.*

Would you please advise us the names of several companies manufacturing machines for roller coating . . . Our correspondent would like to finish wood slats in large scale production . . .—*G.Co. (Chicago).*

See the full-page illustrated ad on page 85 of Oct. 1950 issue.

Finishing Wall Panels

We have always found your publication, *Industrial Finishing*, interesting and helpful in our problems. For this reason, we have kept each issue on file for future reference.

Recently, we had occasion to look up an article in the August 1949 issue pertaining to the finishing of Masonite's Leatherwood by Coralether. The article is quite helpful but we want to learn more about this process and would appreciate any additional information you may be able to give us in that direction.—*A.I.Co.*

At the moment we haven't any additional information on this subject. Possibly someone who reads this may come along with an offer.—*Ed.*

Protective Hand Cream

On page 82 of September issue, we notice a request for a good protective cream or paste for hands and forearms. Under separate cover we are sending you two tubes of our Ty-D Hand Protector. People using this material tell us that it is an excellent protective measure before handling

NEW PERIOD
Production Finishes
BAKING ENAMELS
LACQUERS SHELLAC
ENAMELS FILLERS
SEALERS SUPPLIES
PRIMERS STAINS
SYNTHETICS VARNISHES
NEW PERIOD PRODUCTION FINISHES
CHECK
ON ALL POINTS
• Fillers and Stains
• Lacquers—Clear and Semi-Gloss
• Sealers
• Lacquer Enamels—Flat and Gloss
• Synthetic Enamels
High Quality
Lasting Beauty
Superior Coverage
Low Cost
Easy Application
Fast Drying
Write for 5 Gallon Working Sample at Drum Price
MANUFACTURERS OF FINE WOOD AND METAL PRODUCTION FINISHES
NEW PERIOD Production Finishes
ESTABLISHED 1917
NEW YORK WOODFINISHERS' Supply Co.
109 IMLAY STREET BROOKLYN, N.Y.

lacquers or thinners; also that it is very pleasant to use. We will appreciate your passing these samples on to interested parties.—*Compo Chemical Co., Inc.*

We Like It!

Please enter our subscription, as of the next issue. We have seen *Industrial Finishing* for the first time and have enjoyed it thoroughly. We would like permission to reprint "What Causes Orange Peel", on page 90 of the Sept. issue. We believe this answers a very important question we are constantly faced with.—*F.E.F.*

Requests granted.

Article Interests Us

In Abstract Review No. 139, September 1948 issue, as published by the Scientific Section of the National Paint, Varnish & Lacquer Association, Inc., Washington, D.C., we read the following paragraph:

Finishing: "A Finish that Solved Our Corrosion Problem" by J. Neuhoff; *Industrial Finishing*, Vol. 24, No. 11, pages 38, 40, 42, 44 (1948). The finishing of air conditioning and refrigeration equipment with a chlorinated rubber coating is given.

We are interested in receiving two copies of the article in question or the magazine in which it appeared. If there is any charge, please advise us of the cost and prompt remittance will be made by us.—*I.Co., Inc.*

We are happy to send you tear sheets of the article, "A Finish that Solved our Corrosion Problem".

Note to Readers: Keep a complete file of your copies of *Industrial Finishing;* they contain information, illustrations and ideas that are of real value now and in the future.

Measuring S.S. Enamels

We would like several copies of the article appearing in the July 1950 issue of *Industrial Finishing* entitled, "Consistency Measurements in Silk Screen Enamels." If these are available, would you send us about three copies?—*L.E.Co.*

Copies being sent.

Flock Article

As a regular subscriber to your magazine, I have read your article on "Flock" in the August 1950 issue. We would appreciate your sending us five to ten reprints of this article, for which we will be pleased to pay. These reprints will be sent to our various field men abroad and will be much appreciated by them.—*D.R., Inc.*

No reprints are available but we are sending you a few tear sheets.

Me Too!

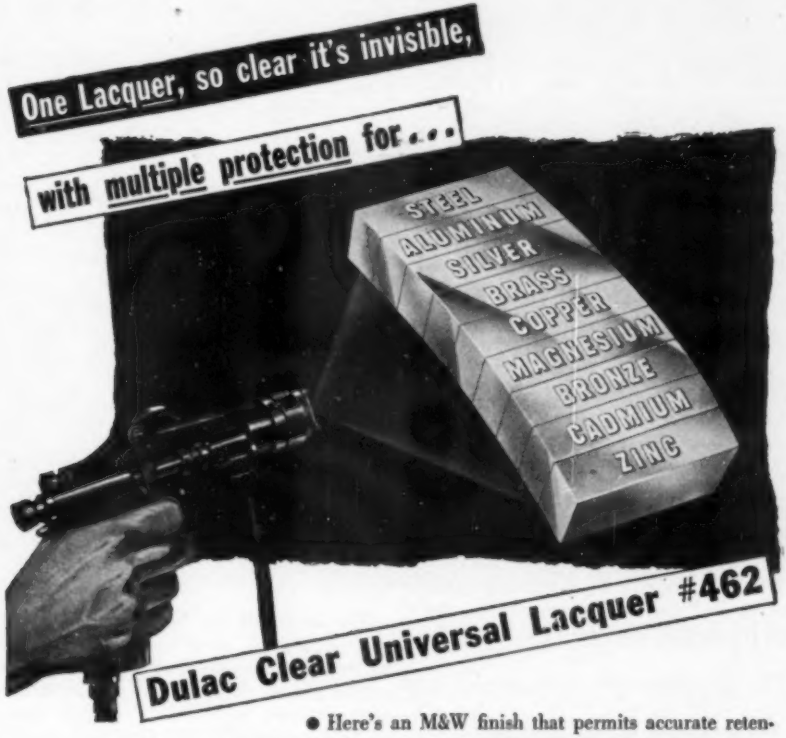
Referring to page 82, second column, October 1950 issue, if all these big shots think so much of this article I must have missed something. Please put a reprint in the mail for me.—*George O.*

White for Bakelite Dials

We are looking for a white enamel for the finishing of dials used on voltmeters, amperemeters, etc. These dials are usually made of bakelite, and the action of the electric current or heat generated by it causes phenolic emanations which bring discoloration of the white dials.

Can you suggest a color-fast white lacquer or enamel that would solve our customer's problem?—*X., Geneva.*

In a letter we are suggesting several concerns who can probably supply your requirements.—*Editor.*



● Here's an M&W finish that permits accurate retention of all desirable surface qualities of most metals . . . that adds lasting protection against heat, cold, weather, corrosion, stain and perspiration — Dulac Clear Universal Lacquer #462. It's formulated to give good adhesion with either the spray, dip or brush method. And it fits into fast production schedules because in five to ten minutes this successful general purpose lacquer dries out of dust . . . hardens in one hour. For complete information, write for Technical Data Bulletin 110 or let an M&W technical consultant discuss your requirements privately with you.

PIONEERS IN PROTECTION
M&WCo 1876

. . . where industry goes with finishing problems

MAAS & WALDSTEIN COMPANY

Newark 4, N. J. • Chicago 12, Ill. • Los Angeles 34, Calif.

Pacific Coast Division: SMITH-DAVIS CO., 10751 Venice Boulevard, Los Angeles 34

MANUFACTURERS OF INDUSTRIAL FINISHES

Whirl Finishing

We were pleased to come across an ad in your June 1950 issue of *Industrial Finishing*. We refer to an ad on page 109 by Ronci Machine Co. We would appreciate it if you would furnish us with the name and address of any other of your advertisers who manufacture a similar machine.—*E.A.S.*

Turn to page 9 of that same issue.

Books on Lithographing

Could you let me know if there are any books published on Roller Coating and Lithographing Processes? I am particularly interested in obtaining latest edition reference books on these subjects, for metal finishing.—*C.R.S.*

We know of none. Perhaps the technical or reference librarian in the public library of a large city can help you.—*Ed.*

We Read Only English

Occasionally some of our readers in foreign countries write us letters or send us publications printed in a language other than English. We can't read them. There's an inconvenience and cost involved in having translations made, so please have your letters typed in English if possible. Thank you.—*Editor.*

Rust and Heat Resistant

We have a serious problem of rust and corrosion on the inside of water-cool chambers in our Banbury mixers. The metal surface of these chambers attains a heat of 300° F., and a constant stream of cool water is thrown against the surface for cooling purposes. We would like to find a protective coating to be applied to this surface that will withstand both the heat and the water over a period of at least one year.

Do you know of any coating that would meet this requirement? We would be grateful to you for any suggestions you might have for the solution of this problem.—*(Rubber Co.)*

In a letter we are naming several firms one or more of which might have a product suited to your requirements. We are not sure. Has some reader a suggestion?—*Ed.*

Books on Flock?

Will you please advise me if any books on flock and flocking methods have been publishd, and if so, where they can be purchased?—*C.L.P.*

We know of no books on this subject—that is none other than the bulletins published by the leading manufacturers of flock, and the several articles published in past issues of this magazine, the last one having been in August 1950 issue.—*Ed.*

Western Metal Exposition to be in Oakland Mar. 19-23

More than 200 metal firms will show their new products and latest developments at the Seventh Western Metal Exposition to be held for five days, March 19 through 23, 1951, in Oakland's vast Auditorium and Exposition Hall.

On the same dates, approximately 100 authoritative speakers will deliver papers on recent developments in making, working, fabricating, treating and application of metals. These speakers will be heard at technical sessions of the Western Metal Congress, also to be held in Oakland, for the seventh time on the Pacific Coast.

Announcements pertaining to the double event just have been made by William H. Eisenman, of Cleveland, secretary, American Society for Metals. The show and congress will be sponsored as in the past, he said, by the ASM in cooperation with 20 other national technical societies.

Whatever your sanding problem...

. . . there's a SUNDSTRAND Straight-Line Action Air Sander to solve it!

Yes, whatever the operation from white sanding through rubbing the lacquer finish . . . the versatile Sundstrand performs it equally well. And it's done smoothly, easily, quickly because the pads reciprocate in opposite directions *for straight line action!* No swirls, no pressure marks . . . no fatiguing vibration! Easily operated by women. Three models to fit your exact needs for finishing large or small areas, sharp corners, confined areas, curved surfaces. To always get a super-fine finish, get Sundstrand.

WIDELY USED FOR: White sanding, wash coat sanding, sealer sanding, rubbing lacquer finish, padding in filler . . . and any other special operations needed for a perfect finish. Write for free bulletin W-52.

SUNDSTRAND

SUNDSTRAND AIR SANDERS

SUNDSTRAND MACHINE TOOL CO.

ROCKFORD, ILLINOIS

Binks Spray Painting School Winter Classes Announced

Binks Mfg. Co., 3116 Carroll Ave., Chicago 12, Ill., conducts classes in spray painting methods and spray finishing equipment during the first full week of each month, except July and December. Classes are held from 9 A.M. to 4 P.M. Monday through Friday.

Dates for the winter 1951 sessions are announced as follows: January 8 to 13; February 5 to 9; and March 5 to 9. Classrooms are in the Binks plant. A special effort is made to attract foremen, supervisors, jobbers and their salesmen, and business executives to the classes. Since factory executives and management face the real problems of spray finishing, Binks reasons that the executive group should know the facts of spray finishing. It is this group that establishes methods, selects spray finishing equipment and determines the type of finish for products.

William Beecham, well-known paint chemist and spray painting authority, is again in charge of the classes. Mr. Beecham draws upon his wide experience in the spray finishing field and his years of work as Director of the Binks Research Laboratory to answer the many questions that confront spray finishers.

By the time students of Mr. Beecham's classes have completed the week of concentrated study, they are familiar with the construction and operation of spray guns, extractors, compressors, and other related equipment. Each member of the class disassembles a spray gun and puts it together again. Men who have never used a spray gun are taught correct methods.

Special emphasis is laid on trouble shooting. Members of the Binks classes are familiarized with the common causes of faulty spraying and are shown how to correct or avoid them. At the end of the week, all are thoroughly informed on the merits and operation of spray guns, both manual and automatic. The practical operation of spray booths is also stressed.

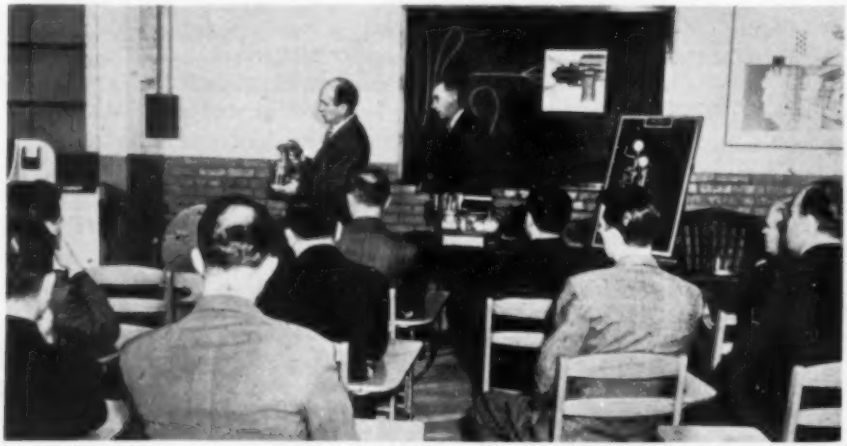
No tuition is charged students of the Binks Spray Painting School. However, each individual must pay his own transportation to Chicago and his own expenses while in the city. Applications from those wishing to attend a session of the Binks School should be made two or more weeks in advance so that appropriate reservations for hotel and other accommodations can be provided. Write Mr. E. F. Watts, Binks Mfg. Co., 3116 Carroll Ave., Chicago 12, Ill.

Glidden Enlarges Facilities in Cleveland

An additional 20,000-sq. ft. of office and warehouse space has been purchased by the Glidden Co. from Climax Industries, located across from Glidden's Paint & Varnish Division plant in Cleveland. The new building will house additional office, shipping and warehouse facilities made necessary by an increasing volume of business in the company's Paint & Varnish Division.

Glidden has also purchased the laboratory and equipment to supplement its present extensive laboratories at the Cleveland plant.

Approximately 4000-sq. ft. of the new building will be devoted to offices. Headquarter offices of the advertising and traffic departments will be moved to the new location.



Classes are shown correct methods of using spray guns and other finishing equipment.

INJECT

new life into your product with

MULTAKOLOR

3 COLORS 1 COAT

Pep up your product with color and watch your sales curve go zooming. And it's so easy, with 16 bright color combinations to choose from. Now, start day-dreaming about your product in color, and if you are a quantity user, we'll even make your color dreams to order.

Write today for all the facts.

DATA SHEET

COLORS PER COAT: One coat applies 2 or 3 different colors.

APPLICATION: Spraying. No undercoat or prime coat necessary with most materials.

MATERIALS COVERED: wood, paper, masonite, plaster, gypsum board.

FINISH: smooth finish in gloss, semi-gloss or flat that almost completely conceals irregular and defective surfaces in the material such as wavy and grainy wood surfaces.

SPEED: With only one coat to spray, the time and labor saving is enormous -- 3 colors in the time it takes for one.

PAINTS · SYNTHETICS
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LACQUERS · ENAMELS

United LACQUER MFG. CORP.

LINDEN, N. J. EVERETT 52, MASS.

PHILADELPHIA 19, PA.

Scientists from England visit Maas & Waldstein. At far end of table (near the elliptical shaped samples on wall) left to right, are two Maas & Waldstein men—Mr. B. F. Ames, Sales Manager, and Dr. G. Klinkenstein, President.

British Study U. S. Finishes

Under the auspices of the Anglo-American Council on Productivity in cooperation with the ECA, a program was planned for a group of 13 British scientists to visit the United States and study modern American finishing practices in specially selected industries during the period of August 17 to September 29, 1950.

Maas & Waldstein & Co., manufacturer of lacquers, enamels, and synthetics, Newark, N.J., Chicago and Los Angeles, was the company selected in the Paint, Varnish & Lacquer Industry to represent that industry in an endeavor to explain and demonstrate new developments and applications in that field.

Subjects such as the pretreatment of metals, including die castings, novelty finishes and various methods of applying these finishes were described in detail. The use of specially formulated M & W finishes for electrostatic spray was discussed at length, as well as other M & W products specially formulated for hot application.

After an entire morning of discussions, which were led by Dr. G. Klinkenstein, President and Mr. B. F. Ames, Sales Manager of Maas & Waldstein Co., the entire group was invited to witness demonstrations of the many novelty finishes which were conducted in the company's laboratory and pilot plant. In this manner the group had an opportunitity to actually spray a number of finishes that intrigued them, and a general opinion forum discussion regarding modern manufacturing processes ensued.

At the completion of the day's program, a complete catalog and color cards were given to each of the British scientists for his own use and ready reference.

Chas. A. Whelan Passes Away

Mr. Charles A. Whelan, Southern Indiana representative for the Robertson Co. (finish manufacturer), Louisville Ky., died on Monday, October 16.

Mr. Whelan lived in Jasper, Indiana, and had long been associated with the wood furniture and finishing industries. He is survived by his wife, one son and one daughter. He was a member of the Knights of Columbus and St. Joseph's Society.

Wood Turners Meet Jan. 26

The Wood Turners Service Bureau will hold its Annual Meeting on January 26, 1951, at the Copley Plaza, Boston, Mass. The permanent address of the Bureau is Statler Office Bldg., Boston 16, Mass.

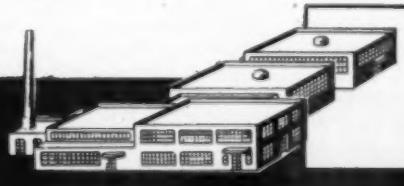
FINISH THE JOB *with* RANDOLPH

There just isn't time for second-guessing, expensive delays or inferior production in today's high-speed, multi-purpose economy.

Doing business with Randolph is the certain way of making sure that your finishing requirements will be met fully and on time. If new production programs bring new finishing problems, you can always depend on the assistance of Randolph's expert research staff and splendid technical facilities to help you tackle and solve them.

Whether you're making airplanes or refrigerators, steel partitions, castings, machine tools or countless other articles, rely—for surface perfection—on Randolph's fine line of Lacquers, Enamels, Dopes, Thinners, Clear Metal Finishes, Clear S. G. for Metal, Colored Lacquers, Texture Enamels and Aircraft Finishes. Randolph's Specialized Production Finishes meet the most rigid and exacting needs of many varied products.

At this crucial time—or any time—it's good management to do business with Randolph because you get the *right* finish when you want it, and in any quantity you need.



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Cleaning Wiping Rags

While looking over September issue of *Industrial Finishing*, I noticed an article on page 56, signed "C.M.J." regarding the use of wiping rags. Will you kindly send me this man's name and address?—*G. K. Co.*

This article was ghost written by one of our editorial staff writers. His work takes him into various plants where finishes are applied on metal, wood, leather and plastic products, and in talking with finishing foremen, and plant superintendents, he comes across many things of interest.

The particular plant referred to in this article is a furniture plant in Louisville, Ky. This concern uses a local towel service company, as explained in the article.—*Editor.*

Why Paint Blisters Around Rivets

I have a problem that is giving us a lot of trouble on our passenger cars. These cars were converted from U. S. hospital cars to passenger coaches and most of them had the old finish removed by sandblasting.

Where we puttied around the rivets (all new rivets) it seems that after a time the paint will raise up in a blister. Also, where the rivets have been removed and the spot has been welded, the paint will be smooth but a large blister forms underneath.

I will deeply appreciate any information you can furnish me as to what you think is causing this trouble.—*R.R.B. (Supervisor of Painting, Monon Railway Shops).*

I went out to the L&N South Louisville (Kentucky) shops and saw Mr. Johnson who is in charge of the mechanical engineering division. He sent me over to the lab. Their head chemist said he believed that Monon's trouble came from putting too much putty in the sunken places around the rivets. The same applies to the welds. He suggested that I go over to the paint shop and talk with the foreman finisher and see cars in the process of being painted, and the type of sunken places found around rivets and welds.

The foreman read Monon's letter, and said that they had had the same trouble. Now they have stopped puttying around rivets. I asked him why there was a low place around the rivets on converted cars. He said that in hammering in some of the rivets the hammer slips off the head of the rivet and puts dents in the surrounding metal. This applies not only to converted cars, but to all types of cars.

They are trying out a new material for glazing welds and dents in the metal surface. It is called "Metal Cover" No. 1007, and the solvent for it is No. 1008. This material is sold by Chicago Railway Supply Co. (address on request). I saw some of it glazed on a car. It is gray in color, air dries almost immediately, and becomes as hard as the metal itself. After knife glazing a car with Metal Cover, they use a portable grinder to

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grind off the spots to make them even with the surface.

After it has been ground down, the spot has a bright metal-like appearance, almost like the surrounding surface. Mr. Sloop, the foreman, said he saw no reason why this material could not be used for filling in around rivets. However, they have just started to use it so they do not know positively whether or not it will cause the paint to blister and peel off. It will take two or three months for them to determine whether or not it is satisfactory.

I saw several cars returned for refinishing because the paint had blistered and peeled around rivets and welds. They looked like they had smallpox. This is what convinced the foreman that they would have to quit using a putty glaze. Then they discovered this Metal Cover and made laboratory tests on it. These seemed to be satisfactory but, of course, the real test will occur when these first few cars have been in actual service on the road for 60 to 90 days.

After talking with the men at the L&N shops I am convinced that they know what they are talking about regarding the trouble Monon is having.

The L&N sandblasts the surface, primes, and then knifes on a glazing compound to build up the surface. This is glazed over the entire metal surface. It air dries quickly. Next they spray on a surfacer and finally the lacquer enamel. Now that they have Metal Cover, they are glazing this material on before the prime coat; then they grind off the surplus to level the surface, and proceed as above. The L&N has adopted a royal blue color for all coaches. It covers well, as it is heavily pigmented.—*P.C. Bardin, Associate Editor.*

Perhaps the cause of those blisters is rust forming around the rivets and welds. Before painting, be sure that the surface is thoroughly dry, especially around the rivets. Condensation of moisture from between side sheets may be seeping out around the rivet heads. Also, look for oil around the rivet heads, from rivet guns.

The trouble on weld spots may be caused from flux used on welding rods. This may not have been properly cleaned off before priming.

The following are methods and materials we use on sandblasted equipment.

First, blow off the sand and dust from surfaces of cars that have been sand blasted. Spray one coat of red oxide primer,* thinned not more than 10% with suitable thinner.* This primer is allowed to dry overnight.

2) Spray two coats of Preparakote No. 65-1051, thinned approximately 40% with thinner.* This material is fast drying; let it dry four hours.

3) Putty deep holes or indentations with Dark Hard Putty No. 99,475.* If holes are very deep, apply putty in two thin coats to prevent excessive shrinkage and cracking. Knife glaze the entire surface of the car with glazing composition No. 90,162.* Let dry over night.

4) Apply two coats of Preparakote No. 65-1051.

5) Apply guide coat. Sand smooth with wet-or-dry sandpaper.

6) Apply one coat of Preparakote No. 65-1051.

7) Apply finish coats of enamel.

I am happy to say that we are no longer having this trouble (paint blistering around rivet heads) and hope this information will be of some assistance to you.

When painting over old paint, wash exterior of car with approved cleaner. Sand the surface lightly with No. 180 sandpaper. Feather-edge any broken surface. Pick out any blisters or rust spots and wire brush these

*Name of manufacturer on request.

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places to the bare metal; touch them up with red oxide primer. Let primer dry over night. Putty with hard putty No. 99,475. Holes that are very deep should be puttied in two operations, using two thin coats to prevent excess shrinking and cracking.

Knife the rough spots with glazing composition No. 90,162*. Sand entire surface with wet-or-dry sandpaper. After the surface is dry, blow it clean with compressed air. Apply one coat of Preparakote No. 65-1051. The car is now ready to receive the finish coats of enamel.—*E. M. Griffin (Car Shop Paint Foreman).*

More About "Cronak"

Referring to "Letters from Readers" on the above subject, on page 82 of Sept. and Oct. issues, this process is covered by patents held by this company (The New Jersey Zinc Sales Co.) and its use is allowed under license arrangement.

The process consists of the application of a film of basic chromium chromate by immersion in an acidified solution of sodium dichromate. Trivalent chromium and hexavalent chromium are the active constituents. The parts to be treated, which should be chemically clean, are immersed in the Cronak solution at room temperature for a few seconds, following which they are rinsed in cool water and then blown dry. On zinc plated parts the treatment may logically follow the plating rinse.

The film is very thin and adherent and will vary in color, depending on the original surface, from an iridescent yellow-green to a golden brown. A normal film will have a thickness of about .00002-in.—*T.N.J.Z.S. Co.*

. . . . We are taking the liberty of forwarding you general brochures on our product "Iridite", which is also a chromate coating. It gives excellent results as to appearance and general performance in corrosion protection.

Iridite is a chemical treatment for producing a complex, chromate type, corrosion-resistant film on zinc or cadmium surfaces. The film is extremely thin and is formed by a chemical reaction between the metal being treated and the Iridite solution. The Iridite coating is an integral part of the metal itself, and cannot flake, chip or peel from the surface; can be applied by dipping, spraying or brushing; provides a flexible corrosion-resistant coating . . . an attractive final finish or an excellent base for paint.—*Allied Research Products, Inc.*

. . . . Several competitive products are offered on the market today and we manufacture one of these proprietory compounds known as "Luster-On".

"Luster-on Utility" is a cold bright dip for zinc; produces a brilliant stain-free finish and gives excellent passivity to electro-deposited zinc; is resistant to stain, tarnishing with age, or white powder corrosion products; may be handled freely during assembly or packing without fingermark disfigurement; provides an adhesive base for lacquers and cements.

It is applied to clean zinc or zinc plated or coated parts by dipping at room temperature, followed by cold water rinsing.—*The Chemical Corp.*

Polishing and Buffing

Publication of a new catalog covering its complete line of polishing and buffing compounds is announced by Frederic B. Stevens, Inc.

The 12-page booklet describes Stevens' many compositions for every metal surface and every polishing and buffing operation. In addition, the booklet outlines customer services as well as offering recommendations for the type of composition to use for each operation. Copies of the catalog may be obtained through representatives of The Udylite Corp. or by writing direct to Frederic B. Stevens, Inc., Detroit 16, Michigan.

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Vedoc

Can Drawer Pulls Be Finished by Tumbling?

We are interested in finishing drawer pulls (not knobs) by the tumbling method. Approximate size of the pulls is ¾ x 1½ x 5-in. The woods we use are oak, hackberry and pecan. Our finishing schedule is:

1) A wash coat of lacquer toner.
2) Paste filler.
3) Lacquer sealer.
4) Sand.
5) Top coat of lacquer or varnish.

We would like to find out whether we could do any or all of these operations by tumbling. Also, whether it is practical to sand these pulls in the raw wood by tumbling. The pulls have some sharp corners.

The color and sheen of these pulls must match that of the spray finish on other parts of finished cases.—*Furn. Mfr.*

Your inquiry has some interesting points from the labor standpoint, but is not practical due to the fact that it would have to be definitely classified as flat work with sharp corners and detail, and would not stand the abrasion of tumbling. Furthermore, the hit or miss laying of drawer pulls against each other, in drying, would have too many wide areas that would suffer in appearance. We have to depend mostly on the round surfaces of wood turnings, plus the sparing application of enamels to keep these contact points, when drying, down to a minimum where the eye does not readily see them.

We have carefully studied each of the five processes outlined in your question, to see if any one of them would stand tumbling. We should have to say "No" to all. The wood drawer pulls will grind against each other in the barrel, no matter how slow the barrel revolves or how small it is in diameter.

Quite frequently manufacturers write us and send samples of furniture knobs which should be considered much simpler than these draw pulls, but even the turned knobs do not stand a very good test in tumbling. Usually they have to be dipped or sprayed to get a quality finish. Even on knobs where quality is not particularly desired, it is difficult to flow any varnish or enamel into the deeply recessed sides.

To check ourselves on the statement that it is not practical to tumble these wooden draw pulls, but that they should be finished either by dipping or spraying, which call for individual handling, we referred your inquiry to our local Thomas P. Beals Furniture Co., a concern rated excellently in the wood furniture manufacturing business and of many years standing. Their opinion coincided with ours.

We think you did just right in bringing up the possibility of some other process, such as tumbling being used, as it is only in this way that progress can be made in many finishing methods. That you turned to Industrial Finishing Magazine for information is very complimentary to the publication. The Editor may be assured that we will do our part at any time he cares to refer these questions to us.—*E. G. Sederquest, Burgess, Fobes Co.*

Training Books for Foremen

Six new training booklets for foremen and supervisors, called the "Psychology of Safety in Supervision," have just been issued by the National Safety Council. The series is written by Dr. J. L. Rosenstein, industrial psychologist and professor in the department of management, Loyola University, Chicago, Ill.

Complete sets of the six booklets are offered to members of the National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill., at 90 cents per set in quantities of from 1 to 9, at 85 cents per set in quantities of 10 to 99, at 80 cents per set in quantities of 100 to 999, and at 75 cents per set for 1000 or more. Prices to non-members are double those listed.

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In Step with the Times

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CHICAGO 14

LABOR

Which way is the labor market going?

Are current events affecting your labor situation?

Is manpower again drifting to womanpower?

Is there security for your production regardless of shifting trends?

DeBurgh Conveyors can give you solid answers to some of those questions. Answers that have already been proven in the field.

None can tell what effect events will have on the labor market.

But you can provide production security, no matter whether male or female factory help will be predominant.

First, a complete DeBurgh Finishing System installation will reduce the amount of labor required.

Second, the patented features of the DeBurgh Conveyor assure "finger tip" control at all work stations permitting the performing of all activities with a minimum of muscular effort.

Women can efficiently perform any task throughout your labor day for there is no lifting or shoving or pushing or pulling that cannot be done with finger tips or a touch of the toe in revolving pallets mounting the heaviest work.

Inquire now, without obligation, and find out what a "tailored" DeBurgh Finishing system can do for the labor situation in your plant.

To expedite service to manufacturers on the Pacific Coast, DeBurgh Conveyors has opened an office in Los Angeles, California.

Inquiries directed to either address below will receive prompt attention.

Investigate!

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- Bakes in 30 minutes at 275° F.
- Other schedules are available
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Frank G. Drake, Sales Manager of Bede Products, Inc.

The appointment of Frank G. Drake as General Sales Manager of Bede Products Inc., Cleveland, Ohio, is announced by Mr. James A. Bede, President of the company. Mr. Drake will succeed Mr. Richard E. Estabrook, who is advanced to General Manager.

Frank G. Drake and R. E. Estabrook

Mr. Drake will handle expanded sales, sales promotion and advertising activities for Bede Products who manufacture paint heaters for all types of industrial and automotive finishing applications.

Formerly Eastern District Sales Manager, Mr. Drake has had over 35 years of experience in the finishing field. For 25 years he was Sales Promotion and Advertising Manager of a company that manufactures synthetics, lacquers and other finishes.

Hellstrom in San Francisco for American Air Filter

Mr. John Hellstrom, Vice President of the American Air Filter Co., Inc., Louisville, Kentucky, has moved to San Francisco and is Manager of the newly created Pacific Division. Under his direct supervision will be the business activities of both American Air Filter Co. and its Herman Nelson Division of Moline, Ill. in the Pacific Territory. The Pacific Division includes offices and representatives in California, Oregon, Washington, Idaho, Montana, Utah, Arizona, New Mexico and western Texas.

Mr. Hellstrom is one of the pioneers of air filtration and dust control. He was President of the Midwest Air Filters, Inc. up to the time it was merged with several other companies to form the American Air Filter Co. of which he became Vice President in charge of the Dust and Fume Control Division.

Mr. Hellstrom's office in San Francisco is in the Standard Oil Building at 225 Bush Street.

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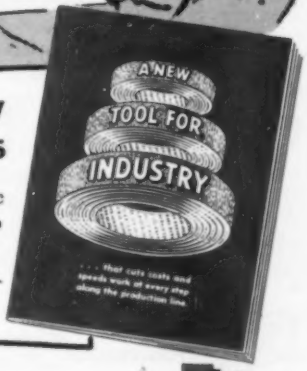

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. . . just look at these drying schedules.
Remarkable for *enamels!*

AIR DRY	BAKE
Dust Free . . . 5-10 minutes	5-10 minutes at 300° F
Tack Free . . . 15-20 minutes	10 minutes at 250° F
Dry Hard . . . 1-2 hours	15 minutes at 200° F

. . . cut down air-drying or baking time. Possibly eliminate the need for baking entirely (like one small manufacturer who found he could save $500 per month by switching to a fast air-dry finish).

. . . ask your regular finish supplier to show you the high gloss, excellent adhesion, good color retention and general all 'round toughness and durability of these finishes.

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Can Coatings
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Clear Wood Finishes
Dip-Tank Finishes
Filing Cabinet Finishes
Wipe-on Furniture Polishes

This is only part of the fast growing list of uses. Should your product be on it? Ask your finish supplier. NOW!

Cyanamid make finishes? No...

that's where your regular finish supplier excels! We make only the resins . . . he knows how to transform them into your kind of finish. So see him today . . . and if by chance he hasn't yet worked with the CYCOPOL Resins, we'll be happy to send him complete data.

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Laboratory Furnace for Baking Coatings Experimentally

A new laboratory furnace has been developed by The Despatch Oven Co., 621 S.E. 8th St., Minneapolis, Minn., to fit the expanded needs of testing laboratories in industry. The size and shape of the new Despatch CF line fits nicely into the space facilities of the average laboratory. The application of cross flow convection heat, with extra air volume, speeds up preheat time, provides for better penetration of products in the work chamber and reduces the time for heat recovery after new loads.

The new CF line has a temperature range up to 850° F. It provides for maximum heat control accuracy and work chamber uniformity. Swinging doors permit location of the furnace where less head room is available. Rounded corners and a wrinkle gray finish improve the appearance of the new Despatch oven.

Sizes range from 13x13x13-in. to 37x25x37-in. in the work chamber.

The new Despatch laboratory line is available in either direct gas-fired or electric models.

In different sizes, gas or electric.

3-Way Fog Nozzle

A new type of 3-way fog nozzle that will extinguish oil, electrical, paint, and many other types of fires with the least possible water is announced by Bete Fog Nozzle, Inc., 85 Pierce St., Greenfield, Mass.

Known as the Bete G-5 Fire Nozzle, the new unit can be changed from full fog to straight stream to complete shut-off by a turn of the handle. According to the manufacturer, the Bete G-5 Fire Nozzle produces more fog at lower pressures, yet is self-cleaning and practically non-clogging because of a patented spiral tip and unique movable core.

Liquid Stainless Steel

Liquid Stainless Steel is a durable surface coating which, according to the manufacturer, is suitable for use on wood, metal, plaster board, composition board, brick or concrete. This coating, applied properly to a clean surface by spraying or brushing, offers resistance to moisture, chemicals, corrosion and abrasion. The film has excellent adhesion, flexibility and toughness.

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I. C. D. FORMULA 9 is the standard of safety and quality . . can be sprayed or brushed . . doesn't raise grain nor discolor . . quickly removes all kinds of finishes and coatings from any surface or material . . costs less to use . . saves time, labor and material.

BRUSH CLEANER I. C. D. — non-inflammable brush cleaner works fast . . does not injure nor loosen the bristles. Easy to use . . leaves the bristles clean as a whistle. Order a gallon can and convince yourself.

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tack free in five minutes. It reaches maximum hardness and chemical resistance in 48 hours at room temperature. It may be force dried by baking for one hour at 200° F.

Further information about the characteristics of this corrosion resistant coating can be obtained by writing The Lockrey-Fater Corp., 38-13 Tenth St., Long Island City 1, N.Y.

Degreaser in Drum Cleans Small Work

A special unit of equipment to fit into an empty 55-gallon drum (with head removed) to convert it into an effective vapor-degreaser for cleaning batches of small metal parts in preparation for painting, is offered by Manufacturers Processing Co., P. O. Box 6, Detroit 20, Mich.

The unit to be placed in an empty drum consists of a heating element,

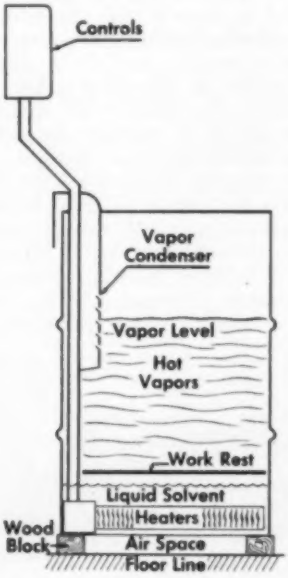

Diagram of vapor-degreasing setup wherein tank is a 55-gallon drum with head removed.

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A patented wood bleach which has been improved.

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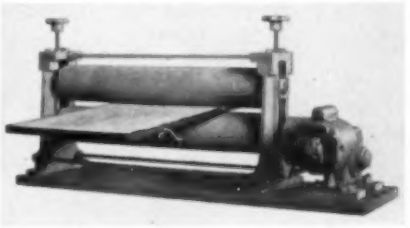
work rest, condenser with a corrosion-resistant hood, and controls. The drum in which the solvent is shipped can be used for the tank.

Enough cleaning solvent is poured into the bottom of the drum to cover the electric heating element by 2-in. or 3-in. The cleaning solvent is heated to a boiling point in the lower section of the drum. Vapors condense on work which rests or is suspended above the heated liquid, and wash off the oil, grease and dirt. Most metal parts can be cleaned in less than 60 seconds. Solvent vapors are kept inside the drum by a scientifically-designed condenser which returns the solvent to the boiling chamber.

Power Laminating Rollers

"Filmwood Laminator" is the name of a machine that has a set of power driven pressure rolls between which sheets of plastic or other veneers just adhered to panels may be passed to apply an adjustable pressure for pushing out any entrapped air to press the laminations in to close union. The rolls are made of especially processed rubber which is particularly adapted to the kind of service required.

The opening between rollers can be set anywhere from 1/16-in. to 1½-in. Pressure is adjustable by a convenient handwheel. The standard machine has two 5x30-in. rollers, set one above the other as illustrated in the accompanying picture. The speed at which



Power driven pressure rollers between which a panel and its applied veneer are passed.

NOW! Tack Cloth in Handy Rolls *or* Cut Bulk

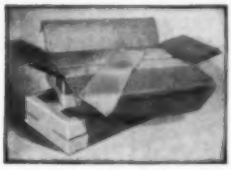
Cut off any size piece and use as needed.

Now you can get Tack Cloth packed the way it's easiest for you to use—either in 150 yard rolls of 36" wide cloth or in handy cartons—100 or more Tack Cloths to the carton.

No matter which way you buy it, you can be sure that every square inch will stay SOFT and TACKY until the very last bit is used up.

The Cut Bulk size is 18" x 36"—folded to 4½" x 18" for easy handling. All of our Tack Cloth is Spontaneous Combustion-Proof, Lint-Free and Wax-Free. It's clean and sanitary—there's no waste.

Write today for complete information, prices and samples.



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panels travel through the rollers is about 15-ft. per minute.

This machine is a product of Filmwood Corp., 46 N. 22nd St., Camden 5, N. J.

"Anti-Haze" Furniture Polish Has Silicone Base

A new emulsion-type silicone-base polish, which is adaptable to most any surface capable of taking a high luster, is announced by Old-North Mfg. Co., Lenoir, North Carolina.

According to the manufacturer, "Anti-Haze" Polish & Cleaner has been widely accepted by many Southeastern furniture manufacturers as a polish that is economically used to obtain a "no-haze" finished surface.

The "Anti-Haze" polish is claimed to benefit most any material used in modern furniture and fixtures. *Surfaces so polished are highly resistant to finger prints and dust collection.* Chairs upholstered with plastic sheeting can especially benefit from the toning effects of this "Anti-Haze" polish, the manufacturer says.

For industrial use, the material is available in 30-gallon drums and 5-gallon kits. A sample is available on request.

Barco Metal Degreaser Q-200

Barco Chemical Products Co., 701 S. LaSalle St., Chicago 5, Ill., announces its newest product, the new Barco Metal Degreaser Q-200.

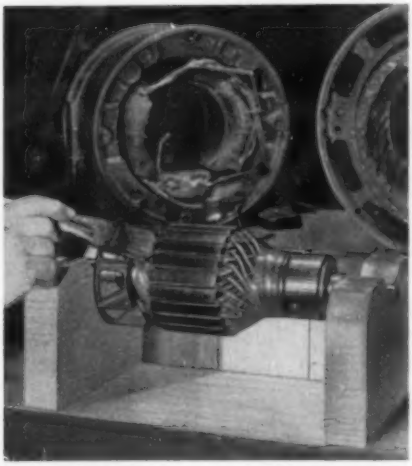
No heat is necessary. The fluid is used cold. Metals or plastics are degreased either by immersion of

parts in the fluid or by dipping and brushing (where grease is extra heavy) or by wiping with the fluid. Parts with painted surfaces (with very few exceptions) can be degreased without harm to the painted surface. In fact, many finished wood products such as handles, etc., are cleaned with Barco Metal Degreaser to remove greasy finger marks. Barco Metal Degreaser removes all oil, grease and waxes quickly and thoroughly.

New Red Insulation Enamel

Fast rate of drying, unusual stability, and superior resistance to the most severe conditions met in electrical service are among the outstanding merits claimed for No. 32 Red Oilproof Enamel, by Irvington Varnish & Insulator Co., 6 Argyle Terrace, Irvington 11, N.J. This new enamel air dries to handle in half an hour, and dries hard in eight hours. Drying can be accelerated by a low-temperature bake.

Irvington No. 32 Red Enamel ex-



No. 32 Red Oilproof Enamel brushes easily, dries fast and provides extra insulation and protection under severe operating conditions.

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For a perfect finish try our 30% SOLIDS RUBBING LACQUER. Easily rubbed to a high gloss or satin finish. Excellent cold check resistance and high build. Write today for a sample or five gallon trial at drum price.

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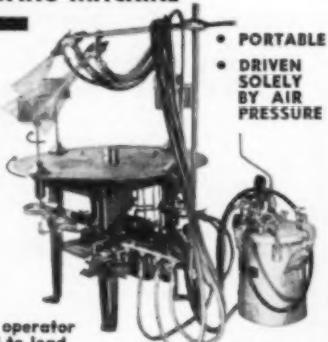

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hibits unusually long shelf life and is supplied at consistency for easy brush application. It bonds well to insulating materials and metals, making it an excellent finish for such parts as bus bars, commutator connections, stator ends, field coils and similar irregularly-shaped windings. It dries to form a tough, resilient film with a dielectric strength of 800 volts per mil. The coating exhibits excellent resistance to oils, moisture, chemicals, abrasive dust, greases and water. It can also be used to seal pipeline joints and gaskets.

Hand Dispenser for Tough Tape

A new hand dispenser for dispensing lengths of tough tear-resistant filament tapes is announced by Minnesota Mining & Mfg. Co., 900 Fauquier St., St. Paul 6, Minn.

Called a "Scotch" brand Filament Tape Hand Dispenser, the new all-metal unit is designed for use with

Dispenser for tear-resistant filament tape.

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Ideal for paint, lacquer, enamel vapors, fumes, gases, etc. Face mask gives air-tight fit, controlled breathing, panorama vision with no blind spots. Cartridges are of colored plastic for easy identification! When ordering, specify the WHITE for Code A; BLACK, Code B; YELLOW, Code AB.

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A specially formulated sealer for the first coat under clear gloss or flat lacquers provides a good body and sands easily. Also works well under varnish and enamel. A production test will prove its superiority.

MAC'S FASHION LACQUERS are available in clear and opaque for application to all kinds of surfaces. Spray easily and give good coverage in any desired sheen. Outstanding for clearness and attractiveness. **Do not get cloudy.** Write for a production test sample and descriptive folder.

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104 E. Mason St., Milwaukee 2, Wis.

"Scotch" brand filament tapes and other hard-to-cut tapes.

Main feature of the new dispenser is a razor-sharp cutting edge. A thumb-operated trigger presses the cutting blade against the tape to make it cut. When the trigger is released the blade retracts so that it cannot cut accidentally.

Stainless Steel Extinguishers

The value of a portable fire extinguisher, as a fire-fighting weapon—aside from the fire-killing power of the extinguishing agent—depends on three things: ease of handling, safety for the operator, and durability.

To provide these qualities requires a strong, lightweight material that will not deteriorate over long periods of time. Stainless steel, the metal whose properties has made possible real improvements in thousands of products, fits the bill exactly, according to some engineers.

Walter Kidde & Co., Inc., 675 Main St., Belleville 9, N.J., is now making its liquid chemical extinguishers of stainless steel.

According to the Kidde Co., stainless steel extinguisher shells are twice as strong and about one-half as heavy as the riveted copper or bronze shells formerly used. In addition, stainless steel is corrosion and rust-resistant, both properties of great importance in locations where moisture of fumes are encountered.

Spe-de-way Bleaching Material

Spe-de-way Products Co., Kenton Station, Portland, Oregon, announces that its Wood Bleach, made exclusively for a large user of wood bleach for more than ten years, is now available to all furniture manufacturers and finishers.

The patented, single operation, controllable bleach requires no neutrali-

zation, does not raise the grain, leaves no deposit on the surface to be sanded off, and leaves the wood perfectly neutral. No acid or alkali remains on or in the wood to disturb the stain color or the finish. It provides a simple economical and efficient method of removing natural color from all types of wood, to any degree desired, permitting the attainment of all blond finishes. The degree of bleaching can be controlled from a light surface bleaching to a complete elimination of color from the wood.

To use the bleaching material the surface of the wood is thoroughly wetted, but not flooded, with equal parts of the two solutions. A second application in 20 minutes is given where complete elimination of color is desired. Exceptionally dark streaks, like black mineral streaks, are penciled out.

With the use of Spe-de-way Wood Bleach, the beautiful graining of such dark woods as mahogany, walnut, etc., can be utilized in the production of blonds, limed oaks and other light finishes. By bleaching out undesirable colors, many reject veneers can be economically converted into first quality, usable materials.

Hard Flexible Durable Enamel for Metal

Striking an enameled iron pipe six or eight sharp blows with the round end of a peen hammer, Dr. Charles G. Moore, director of research of The Gliddent Company's paint and varnish division laboratory at Chicago, left several deep dents in the pipe. The enamel was unbroken.

The enamel, with silicone resin as its base, is the first of its kind to pass the laboratory development stage. Dr. Moore demonstrated the qualities of the new enamel at Glidden's Fifth Annual Research Conference in Cleve-

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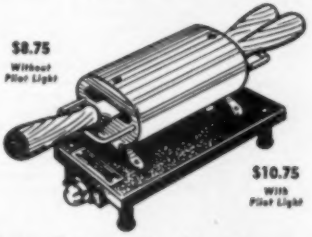

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Tack-Off Dust, Grit and Lint with a "DUST-ALL" Tack Rag before finishing

Specks of dust, grit and lint accumulating on surfaces to be finished, cause blisters and blemishes when painted over. For only a few pennies per job, your finishing department provided with "Dust-All" Tack Rags to wipe off, collect and hold this objectionable matter, can be assured of fine finish jobs.

Ask for further information on "Dust-All" Tack Rags for industrial use and for a sample.

Be sure to get the Tack Rag that comes in the Red Checkered Bag.

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A Quick, Smooth, Uniform coating—assured by BARRETT GALVANIZING AND HOT TINNING CENTRIFUGALS

BARRETT CENTRIFUGAL GALVANIZER is driven with high torque head and has an equalized disc brake for quick stop.

With the Barrett Whizo Galvanizer, excess metal is quickly removed from small parts after dipping in molten metal, in fact, much faster and more uniform production is assured. Parts will also pass the most rigid inspection for quality.

The method of handling is simple and easy. Work to be coated is placed in a round basket and submerged in molten metal. When thoroughly heated, the basket is placed in the Barrett Centrifugal to be immediately accelerated to high speed, the excess metal being thrown off before it can cool.

A quick pick up and stop (from 2 to 3 seconds each) assures maximum production with an even thickness of coating.

Machines furnished with or without heated surrounding drum, in capacities from 40 to 240 loads per hour, handling from 5 to 100 lb. loads. When used for tinning threaded work, rethreading has been found to be unnecessary.

Barrett Centrifugals are used extensively, combine speed with convenience of operation and the utmost in safety. They are highly developed to meet all reasonable requirements, have self-contained motor drive and occupy a minimum of floor space.

Send at once for full details of Barrett Centrifugal Galvanizer

THE LEON J. BARRETT COMPANY

Designers and Builders of Centrifugal Machinery

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INFRA-RED OVENS
(Lamped or Lampless)
Individually engineered in stationary, conveyorized, portable or special designs
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land last month where the company's reasearch directors and other technical staff representatives compared notes on new products to come.

Not only was the new enamel an outstanding accomplishment of the Glidden scientists during the year but Dr. Moore said "we consider this the biggest step in the production of industrial finishes from the silicones that has so far been accomplished."

"Our aim was to produce an enamel with the surface hardness and chemical resistance of porcelain without its brittleness." Further information about the new enamel can be obtained from The Glidden Co., 11001 Madison Ave., Cleveland 2, Ohio.

Peter M. Rusnak is Made T.S.R. for Standard Varnish Works

Peter M. Rusnak has been appointed a Technical Sales Representative for Standard Varnish Works, New York, according to an announcement by Mr. Carl Bauer, Manager of Industrial Sales.

Mr. Rusnak, a graduate of Brooklyn Polytechnical Institute, has been active in the industrial finishes field for more than 15 years. His activities for Standard Varnish Works will be concentrated in the Eastern Pennsylvania - Southern New Jersey territories.

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Industrial FINISHING Editorial

Increased Volume in Industrial Finishes

An article on the above subject in the New York Herald Tribune for Oct. 9, 1950, by Harvey E. Runner, who interviewed Mr. M. H. Sander, President of the Monroe Sander Corp., manufacturer of finishing materials, Long Island City, includes the following interesting paragraphs:

There probably isn't a product manufactured today—for peace or wartime use—that does not require some protective coating known as an industrial finish.

Mr. Sander believes that the output of the industrial finishing industry this year will exceed its record 1948 total of $387,145,811. He estimates that sales for the first nine months of 1950 were about 15% ahead of the like 1949 period. Sales in all of 1949 were $333,446,192, according to Department of Commerce figures. If the current 15% rate of gain should be maintained for the full year, 1950 sales would total $383,462,000.

The industry's sales in 1940 totaled only $159,965,000, so if a new record is set in 1950, it will mean at least an increase of 143% within a ten-year period. These figures on sales of industrial finishes, he emphasizes, do not cover paints sold from shelves of retailers. They are total sales of paints for industrial use only.

There are four definite reasons for the growth of industrial finishes, according to Mr. Sander. They are:

1) The development of synthetic resins has made possible the production of better finishes and has enabled industrial finishing companies to solve an endless number of coating problems that had troubled manufacturers of many different products.

2) The development of synthetics and lacquers, which hastened the drying time of the finish from days to hours and in some instances to minutes, has enabled various industries to increase production without the necessity of having to increase floor space to allow products to dry.

3) The decision of many industries to increase the use of finishes.

4) The growth in new industries, a development that has been made possible by continuous improvement in finishes.

Current Color Trends in Furniture Finishing

★ With so many fine "ranch" type homes being built and lived in, a great demand has developed for various light finishes in furniture. Lime oak is currently very popular because the color is so well adapted to modern styles of furniture. Manufacturers should be cautioned that when working with oak, the wood must be carefully filled. Otherwise an open grain wood, such as oak, can be "rough" and spoil an otherwise excellent product. Lime oak must have a soft even

---

★ *Guest Editorial . . . Many readers can write an excellent editorial—two or three paragraphs that present a timely suggestion or valuable idea which will stimulate thought on a live subject. The Editor welcomes guest editorials and pays for those used.*

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SEALERS — Thoroughly seal wood, with full foundation to hold out lacquer. Will not "cloud" stain and filler. Excellent sanding properties.

RUBBING LACQUERS — Level out smoothly with full depth of finish. Will dull-rub or take mirror-like polish.

WATER WHITE LACQUER — Ensures maximum color retention on pale and bleached woods, blonde, silver gray, and similar modern furniture effects. Rubs and polishes.

Available in gloss, semi-gloss, satin, and dead flat.

Kirker wood finishes offer maximum flexibility to resist marring, alcohol, and cold checks; and uniform high quality for lasting furniture beauty.

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tone, with all light and dark spots eliminated.

Silver oak is another popular color, especially for occasional pieces. This effect is obtained by using a basic mahogany finish on the oak and then overtoning it with a light color. The lighter color stays in the pores of the wood to give the silver oak effect.

The rich natural grain of mahogany lends itself admirably to all kinds of blond finishes. When working with mahogany care should be taken to avoid covering up the natural wood grain with any semblance of a "painted" effect. Proper finishing can be accomplished with the proper stains and in the toning process.

Walnut, in various shades, is also quite popular. The lighter shades of walnut are better adapted to modern furniture. To be effective, walnut finished modern pieces should present a dull rubbed effect. Semi-gloss top lacquer should be used instead of a high gloss top lacquer.

Various combinations of toast and walnut finishes are also popular with modern trends. Modern furniture, with its large flat surfaces, presents a basic finishing problem in that all surfaces must be given the utmost care in sanding operations. All flat surfaces, as well as rounded corners, must be glassy smooth. Otherwise the overall value of the product will be lost.—*William B. Leil.*

Henderson, Southern Rep. for Irvington V. & I. Co.

Irvington Varnish & Insulator Co., Irvington, N.J., manufacturer of electrical insulations and insulating varnishes, has appointed L. V. Henderson, 140 Walker St., S.W., Atlanta 3, Ga., as southern states representative. Mr. Henderson will handle Irvington products for Florida, Alabama, Georgia, and most of Tennessee.

Silk Screen Process Industry Meeting

★ The Silk Screen Printing Association recently celebrated its second birthday with a convention and exhibition staged on the roof garden of Cincinnati's Hotel Gibson. It was a 3-day affair (Oct. 23-25), attended by processors and printers from many parts of the U. S. and Europe.

It was gratifying to note the eagerness and enthusiasm with which both visitors and exhibitors regarded this get-together. From all appearances it seems that the process industry has grown up to take its place as a mature member of the graphic arts field.

Statistically, the Screen Process Printing Association, International (S.P.P.A.) is headed by John W. Key, its president. At the time of the Convention the SPPA had more than 400 members in the United States, Canada, and Mexico. There are 24 affiliate zones in the United States which operate under the charter of the International association.

As to the exhibit itself, there were 53 exhibitors, all eager to demonstrate the latest developments in their respective fields of endeavor. And there was evidence of pride not only in the quality of equipment and materials but in the finished products produced.

The trend in silk screen work is definitely toward mechanization to eliminate most of the hand operation on routine jobs; and from the demonstrations of each of the various printing presses on the floor, it seemed a practicality.

Another trend is toward the use of faster drying paints to keep pace with machines that turn out the work more rapidly.

The Convention dramatically presented the evolution of process work from a hand craft to an industrial graphic art that is capable of high speed volume production — without losing its versatility.—*J.I. Biegeleisen.*

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Switch to DETROIT "TAC" RAGS and avoid rejects. Remove all dust, lint and sand quickly, efficiently. The standard for 16 years. Order from your supplier today, or send for sample.

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WOOD BLEACH

This single operation, controllable, Patented Bleach

- Requires No Neutralization
- Does Not Raise the Grain
- Leaves No Deposit
- Wood Is Left Neutral
- Economical . . . Dependable

Gallon Unit makes two gallons of bleaching solution. Application by spray or synthetic rubber sponge.

Delivered prices quoted on request.

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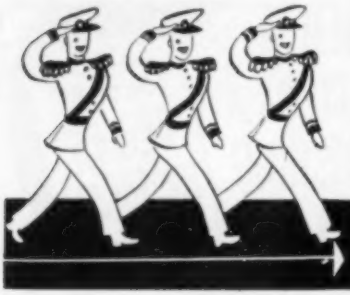

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PINHOLING PROBLEMS
on wood panels?
Many concerns use "Liquafill Sizing"
For information, write
THE LIQUAFILL MFG. CO.
823 Richard St. Dayton 3, Ohio

Industrial Finishes Seminar Held by Lowe Brothers

The Lowe Brothers Co., paint and varnish makers, Dayton, Ohio, conducted a 5-day Industrial Finishes Seminar for its industrial salesmen during the week of October 9.

The meetings headed by Edward F. Teyber, Industrial Division Manager, covered many phases of creative selling, new product development, and the latest techniques of spray application of Lowe Brothers Industrial Finishes. Assisting in the presentations were J. B. Woods, Industrial Division Sales Manager; E. W. Fasig, General Superintendent; R. R. Hanson, Director Technical Service Laboratary, and Dr. J. M. Purdy, Chief Chemist, Chemical Laboratory.

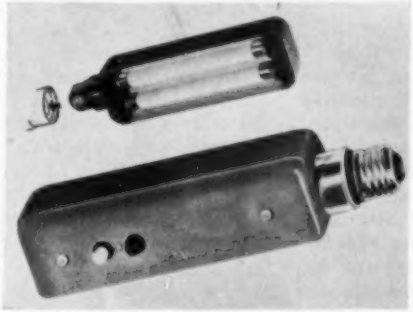
Random Comment on the Industrial Scene

(Continued from page 8)

covers, combined with new, improved carbon blacks, has increased hose life in some cases by 500% in a 10-year period. Such improvements are recorded for many types of oil hose due to improved resistance of the hose tube to oil. Cover improvements include increased resistance to abrasion and cutting, sunlight, heat, weathering, oil and acids.

* * *

Fluorescent Screw-in "Bulb". Hot incandescent work lights may now be converted to cool fluorescent simply by screwing a Lite-Mite "bulb" into any ordinary lamp socket. Existing



Screws into ordinary electric light socket.

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work lights in the factory, laboratory, office or home, remain as originally installed, allowing the same flexibility plus the 300° rotation of the Lite-Mite "bulb" shade for even more efficient focusing.

This "bulb" contains two 4-watt fluorescent lamps and all control components entirely within the 2x6-in. shade—an exceptionally compact design. The entire fixture is hardly larger than the ordinary incandescent lamp, yet it produces over 400% more light for equal wattage.

* * *

Strong Glass Tube. A substitute for steel tubing has been developed. It is known as "Glasweld"; is a laminated product in which glass fibers in the form of cloth, mat or tape are bonded with rosins to form a rugged tube impervious to high temperatures, chemical action and sledge hammer blows. It is rust and corrosion proof, and resists many dilute and strong acids.

It is possible that this material will replace corrosion resisting materials such as stainless steel, lead, etc., which may become very critical.

What's New by Hercules at Paint Industries Show

A new lacquer finishing technique that is attracting considerable attention; a chemical resistant paint base; and synthetic resins manufactured under statistical quality control methods were featured in Hercules Powder Co.'s exhibit at the 1950 Paint Industries Show in Chicago, November 9-11.

The "hot-lacquer process", is attracting widespread interest in the finishes field,

not only because of the economies it offers to the finishing industry but also because it offers a means of by-passing the serious and ever-growing shortage of volatile ingredients.

In the hot-lacquer process, heat is used instead of volatile lacquer ingredients to make the lacquer thin enough to spray. Users of the new technique report they gain many advantages including savings in material costs, reduced cost of application, and production savings.

Examples of automobile parts and furniture sprayed with hot lacquer were on display.

The chemical resistant paint base on display was "Parlon," Hercules' chlorinated rubber. The outstanding chemical resistance and wear resistance of Parlon had led to its widespread use in maintenance paints for both metal and concrete surfaces.

Hercules synthetic resins for paints, varnishes and lacquers are manufactured under rigid quality control specifications.

The exhibit also showed the application for "Vinsol," a low cost, dark colored resin in dark colored lacquers and varnishes.

Carl Wehr's New Position With Reliance V. Co. in Chicago

Mr. Carl E. Wehr has been placed in charge of the purchasing and technical development work for Reliance Varnish Co.'s Chicago plant at 4501 West Haddon Ave. He has had considerable experience in a number of large paint concerns.

DeVilbiss Company Announces New Sales Program

Howard P. DeVilbiss, President and General Manager of The DeVilbiss Co., Toledo, Ohio, has announced the appointment of Brooke, Smith, French & Dorrance, Inc., Detroit and New York Advertising Agency, as merchandising and advertising counsel.

A new sales program to enhance the company's position in the fields it serves is currently in progress.

The 62-year-old DeVilbiss Co. has won international recognition for the development and manufacture of specialized equipment utilizing air in spray applications. The company has sales and service branches strategically located throughout the United States and Canada, and is represented in every civilized country of the world.

DeVilbiss spraying equipment is used for everything from adding vitamins to food products, industrial coating and finishing, to interior and exterior finishing of homes and commercial buildings.

The company also manufactures air compressors, hose and hose connections for industrial and commercial applications, and exhaust systems for industry.

Torit Dust Collectors Shown in New 28-Page Catalog

The complete line of Torit Dust Collectors, and their application to standard and special dust problems, are described and illustrated in a 28-page catalog just released by the Torit Mfg. Co., 300 Walnut St., St. Paul 2, Minn. Among the units shown are cabinet dust collectors in sizes ranging from 1/3-hp. to 5-hp., and cyclone separator types from ½-hp. to 5-hp.

New items described in this catalog include Special Purpose Units in both cabinet and separator type Torit Dust Collectors. These units have extra large dust storage capacity, and are designed to facilitate the emptying of this dust into containers for salvage or disposal.

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A large manufacturer of radio and television cabinets located in Ontario, Canada, has an opening for an expert finisher. Applicants must have technical and practical knowledge of all phases of finishing. Must be capable of supervising 175 men, meeting schedules with high quality finishing. The salary will be commensurate with ability to produce quality work on schedule. Do not apply unless you can meet above qualifications. In reply give details of education, experience and references. Address IF-764, care Industrial Finishing.

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We will manufacture to your specifications. We have additional capacity to produce paints, enamels, varnishes, alkyd resins, lacquers. Carload storage tanks, mixing tanks, roller mills, pebble mills (20 to 600-gal.). Well equipped laboratory and capable staff. Midwest location. Address IF-772, care Industrial Finishing.

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Guaranteed first-grade lacquers and baking enamels for sale by original manufacturer. Quantities 100 to 1000 gallons. Price $1.00 to $1.50 per gallon, less than material cost. Packed in drums or new 5-gallon cans or pails as required. Address IF-761, care Industrial Finishing.

FOR SALE.

Degreaser — "Detrex". Steam Heated, Solvent. Style VS-800. Approx. 8-ft. high. 3½-ft. wide, 12-ft. long. Slightly used. Exterior rusted. Interior good condition. $750. For more details, write GEORGE KOCH SONS, Inc., Evansville 4, Indiana.

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At right: Steam heated, 22 foot long oven for removal of moisture from paper filters used in acetate yarn manufacture at Tennesse Eastman Corp., Kingsport, Tennessee.

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